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UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL ADJUSTMENT ADMINISTRATION



Report of the Administrator  
of  
The Agricultural Conservation  
and Adjustment Administration

1942



UNITED STATES  
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## LETTER OF TRANSMITTAL

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UNITED STATES DEPARTMENT OF AGRICULTURE,  
AGRICULTURAL CONSERVATION AND  
ADJUSTMENT ADMINISTRATION,

*Washington, D. C., October 15, 1942.*

HON. CLAUDE R. WICKARD,  
*Secretary of Agriculture.*

DEAR MR. SECRETARY: Herewith is transmitted the report of the Agricultural Conservation and Adjustment Administration, which includes the combined reports of the Agricultural Adjustment Agency, the Soil Conservation Service, the Federal Crop Insurance Corporation, and the Sugar Agency for the fiscal year ended June 30, 1942.

Sincerely yours,

M. CLIFFORD TOWNSEND, *Administrator.*



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## FOREWORD

The American farmer has wrought a production wonder this year. His hard work and resourcefulness, a favorable growing season, and an organized agricultural program account for his bountiful harvest.

Never, under any circumstances, has the agriculture of any nation brought forth food and fiber on a comparable scale. The fact that United States agriculture has achieved a record output in the face of many scarcities and production difficulties is all the more praiseworthy.

Immediately after Pearl Harbor, the Department, which was already mobilized for abundant production, streamlined its organization for war duty. Thus 19 departmental agencies were grouped under 8 administrators to coordinate more closely the planning and operating functions of agriculture. One of the coordinated groups is the Agricultural Conservation and Adjustment Administration, consisting of the Agricultural Adjustment Agency, the Soil Conservation Service, the Federal Crop Insurance Corporation, and the Sugar Agency.

This combined report reflects the manner and extent of the contribution the four agencies of the ACAA are making to the war effort. It manifests also the way in which the integral phases of the agencies' programs are being utilized by farmers in achieving a common end—producing the right amount of the right commodity for as long as the war lasts.

M. CLIFFORD TOWNSEND, *Administrator.*

# REPORT OF THE CHIEF OF THE AGRICULTURAL ADJUSTMENT AGENCY, 1942

UNITED STATES DEPARTMENT OF AGRICULTURE,  
AGRICULTURAL CONSERVATION AND  
ADJUSTMENT ADMINISTRATION,  
AGRICULTURAL ADJUSTMENT AGENCY,  
Washington, D. C., September 15, 1942.

Mr. M. CLIFFORD TOWNSEND,  
*Administrator, Agricultural Conservation  
and Adjustment Administration.*

DEAR MR. TOWNSEND: Herewith is transmitted the ninth report of the Agricultural Adjustment Agency covering the fiscal year ended June 30, 1942.

Sincerely yours,

FRED S. WALLACE, *Chief.*

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## AAA IS MOBILIZED FOR WAR

The "E" banner—for excellence in production—goes to agriculture for a record harvest. This year, for the fourth in a row, the farmers of the United States have achieved new production marks.

All along the home front the accent is still on production—farm and factory—to supply the fighting front. So great is the pressure of war on the farm front that selective output is more necessary than ever in order to get the right amount of the right crop at the proper time. Agriculture is mobilized fully for war through the production-adjustment and other facilities of the AAA program.

Fortunately, agriculture had launched a program of increased production 8 months before Pearl Harbor. And 3 months before December 7, the broadest agricultural production program ever undertaken was inaugurated, when unprecedented national production goals were established for practically all the farm commodities grown in this country.

Fortunately, too, for the Nation, America's 6 million farmers had at their disposal the flexible machinery of the AAA farm program, without which there could hardly have been a successful production goal program this year. The AAA was a rallying point for farmers; its organization provided a channel of communication for contact and guidance.

The provisions of the AAA program were focused on encouraging farmers to grow crops vital in the war effort of the United States and her allies. Part of this task involved holding within limits the production of heavily stocked crops so as to avoid wasting land, labor, and machinery needed for the most critical commodities.

#### PRODUCTION YARDSTICK

Production goals, announced in September 1941, served as a yardstick for determining how much of each commodity farmers needed to grow in 1942. For some crops, the goals indicated minimum requirements; for others they fixed maximum desirable production limits. For some commodities, such as vegetable-oil crops, the demand was so great that farmers needed to produce all they could grow, with no fear of having too much.

The sizes of the goals were staggering. Even so, the sights were raised after Pearl Harbor to make sure that farm production would not fall short of the mark. The over-all goal was 5½ percent above the 1941 record production and one-fifth greater than the average output in 1935-39. The high-vitamin foods were needed for our war-activated manpower. Wheat was the only food crop for which a reduction was advisable. (See table 8, p. 32.)

In addition to producing for our needs—civilian and military—farmers were asked to produce for lend-lease shipments and for the accumulation of stockpiles for future needs.

The AAA had used goals for major crops for a number of years, but the Food-for-Freedom program expanded this idea to include virtually all the crops grown. The AAA farm-plan idea was also extended to include an "intentions to perform" blueprint for applying the production goals to each farm.

Thus, a blueprint of the entire 1942 food campaign was mapped out. The forces were already organized, and the "minutemen of agriculture," AAA committeemen (with the cooperation of USDA War Boards), helped each farmer plot his voluntary assignment.



## FITTING THE PROGRAM TO WAR NEEDS

To fit the 1942 program to wartime conditions, provisions were made for: Relaxing acreage provisions for needed crops, while holding the line on crops already in surplus; assisting farmers to increase supplies of seeds; helping small farmers to grow food for home use, thus releasing commercial stocks for war requirements; and cooperating with other Federal agencies in the integrated programs of crop loans, crop insurance, price supports, and surplus-removal operations.

The fact that agriculture was able to meet the war crisis without conversion delays was traceable to agriculture's proverbial willingness to produce abundantly. Grain reserves, stored in the bins of the Ever-Normal Granary, were like a bank account built up for a rainy day—a day that was not so long coming. They proved valuable to this country in producing the large volume of meats and other concentrated, high-vitamin foods needed for lend-lease and other requirements. Currently produced grains alone could not have met the need. During the 1942 fiscal year, United States farmers fed 150 million bushels of corn, or about one-fourth of the Ever-Normal Granary stocks. From the beginning of the feed program for wheat to the end of the fiscal year, 36 million bushels of wheat were sold by the Commodity Credit Corporation to livestock producers and feed mixers for feeding purposes.

## PRODUCING MORE WITH LESS

As industry plunged into the problem of converting to a war basis after Pearl Harbor, the demand for certain war materials became acute. Since many of these materials were used to manufacture farm machinery, the output of this type of equipment was considerably curtailed. Added to this was the problem of farm labor scarcities as the armed forces and war plants claimed more and more farm men.

Thus, with less new machinery and less labor, and with scarcities of certain seeds and of many supplies, farmers of the United States increased their production three times as fast during 1 year as they had increased it during 4 years in the first World War, 1914-18.

In spite of the colossal size of the 1942 job undertaken by the farmers, in spite of the handicaps and difficulties they encountered, indications were that they would top the 1941 total production by about 12 percent instead of the 5½ percent originally asked.

September reports showed that farmers would achieve or exceed the goals for important crops in all but a few cases.

## ADJUSTMENT MEASURES

The measures provided under the farm program for adjusting crops in line with national needs include: (1) Acreage allotments which synchronize with production goals and furnish a guide for planting the desirable acreage of each crop; (2) marketing quotas which place a limit on the marketing of crops with extra-large supplies on hand; (3) price-support measures, designed to encourage production of crops which are badly needed; and (4) parity payments which serve to bridge the gap between loan or market rates, plus conservation payments, and parity, principally for crops with large supplies on hand.

Every effort was made to encourage farmers to increase production of all the farm commodities for which requirements were likely to be urgent. Production of various commodities was aided by the support of prices at a level of at least 85 percent of parity or a comparable price through: (1) Direct purchases of foods, and (2) commodity loans on the basic crops. In this way farmers are protected against extreme price slumps and resultant financial losses in the face of production difficulties, such as rising costs and labor and equipment shortages.

These price-support measures also have accrued to the best interest of the consumer and the general public. With the guarantee of an assured return for their crops, farmers felt free to step up production. Ample production is a hedge against inflationary prices, along with price ceilings.

#### PARTICIPATION

Farmer participation in the 1941 AAA program continued around the 6 million level. A record high was reached in the cropland covered, with 81 percent operated by cooperating farmers in 1941. This compared with 80 percent in 1940 and 78 percent in 1939.

#### PAYMENTS

Farmers may earn two types of payments under the agricultural conservation program: (1) A payment for carrying out approved soil-building practices; and (2) a payment for complying with special crop allotments, such as those for corn, wheat, cotton, rice, tobacco, and potatoes, and peanuts for edible purposes.

Total conservation payments in connection with the 1941 program amounted to \$456,369,000, and parity payments on cotton, corn, wheat, rice, and tobacco totaled \$196,908,000, making a combined total of \$653,277,000 earned by farmers.

#### FARM INCOME

Increased demand and purchasing power were reflected in a 29-percent increase in the 1941 cash farm income over that for the 1940 calendar year. Indications were that cash farm income in 1942 would approximate the 1919 record high. While farm income showed a considerable increase, it was not out of line with the increasing industrial and nonfarm income.

The achievement of parity for a number of farm commodities in the 1941 selling season was continued and spread to other commodities in 1942, so that for the first time in many years farmers' returns in general approximated the parity level.

Even with higher returns for their products, the farmers' share of the national income about equaled the 1935-39 average. It is significant to note that food costs in 1941 were one-fifth less than in the boom year 1929, whereas the nonfarm population had about the same income per person as in 1929. Farmers, representing 22.5 percent of the total United States population, in 1941 received 8.2 percent of the national income.

#### CONSERVATION BOOSTS YIELDS

One of the factors contributing to the success of this year's farm output was the fact that farmers were cashing in on conservation achieved

under farm programs during the last 9 years. The conservation phases were continued in 1941-42 with even greater emphasis than in the past. It is reliably established that conservation farming is the surest means of getting greater production on a continuing basis from year to year for as long as the war lasts. Sometimes conservation is thought of in terms of saving up soil fertility for future generations. Actually, it is the most effective way to boost output *now* as well as for the future.

Indications were that crop yields per acre this year would be 35 percent above the average during the 1923-32 period and 12 percent higher than the 1941 record yields. Through a conservation system of farming, farmers in the United States have been able to increase production, at the same time holding the acreage of soil-depleting crops in line with national goals. The acreage devoted to soil-depleting crops in 1941 was about 269,000,000 acres, as compared with the 1928-32 average of 299,000,000 acres.

Some of the outstanding soil-building achievements under the 1941 program were: Seeding legumes and grasses on 42,957,434 acres; contouring intertilled crops on 8,150,866 acres; strip cropping on 6,194,215 acres; constructing 45,732 miles of terraces on more than a million acres; planting 145,121 acres of forest trees; reseeding 26,518,371 acres of pasture by deferred grazing, and reseeding pastures by the application of 12,702,261 pounds of seed; applying more than 14 million tons of fertilizer and lime, including 1,136,767 tons of 16-percent superphosphate or equivalent, and 13,530,499 tons of limestone; growing green-manure and cover crops on 19,516,296 acres; and constructing 54,868 dams. (See table 11, p. 36.)

The AAA's conservation efforts were strengthened in 1942 as a means of achieving greater output this year and in future years.

#### AERIAL PHOTOGRAPHY

The use of aerial photographs, developed by the AAA as the most economical and accurate method of checking performance under its farm programs, was continued during the fiscal year 1942. Approximately 1,750,000 square miles were aerially photographed for the AAA by private companies under a competitive bidding system. The cost of photography during the year averaged about \$2.50 per square mile flown. An increased use was made of mosaics of aerial photographs, especially in connection with range conservation and planning work.

The aerial photographic laboratories are using the greater part of their precision photographic equipment and highly trained personnel in producing various types of reproductions from our aerial negatives for the different branches of the War and Navy Departments.

Other Federal agencies, cooperating in the war effort, are using AAA aerial photographs to locate deposits of vital minerals and oils, in range and forest surveys, to compile maps and charts, and for a great variety of other uses. As high-quality aerial photography can be achieved only during clear weather, without the AAA photographs, it would have been impossible for this vitally necessary photography to have been obtained at any cost in time for its use in speeding the war effort. Its availability has constituted a major contribution to preparing for and conducting the war.



## DEMOCRACY

In every agricultural community the program is run democratically by the farmers themselves. The program provides the medium through which they can work toward fulfilling their own best interests and the best interests of the Nation, for the farmer, in producing abundantly, actually works for the consumer.

This, of course, does not minimize the job that the individual farmer, working in concert with other farmers, has done; in the end it was the farmer himself—the sweat of his brow—that made possible the record-smashing production of 1942. Not only the farmer, but the whole farm family deserves due credit for this accomplishment. Farm women have added to their usual important role on the farm the extra duties of helping in the field or around the barn when labor was scarce.

## WAR BOARDS AND AAA COMMITTEES

When it was realized that the demands upon American agriculture, through lend-lease and other requirements, would be the greatest in history, one of the primary steps taken to coordinate the production effort of the Department was the establishment, on July 5, 1941, of USDA defense boards, later designated as USDA State and county War Boards.

The boards are made up of representatives of the Federal agricultural agencies with field activities in each State and county. As the changed name indicated, the emphasis was shifted to wartime agricultural production in its broadest sense, from soil to consumer. The boards are in a position not only to mobilize with greater effectiveness their own activities as a body but also to integrate the activities of the member agencies. The chairmen of the State and county War Boards are the chairmen of the State and county AAA committees.

War Boards, with the aid of AAA committees, directed a number of farm collection and conservation campaigns throughout the country. These included the machinery-repair drive, the collection of scrap iron and other waste materials, and tire and burlap conservation. They also moved to offset serious anticipated shortages in farm labor.

The boards and committees also are the source of information locally on price relationships, steps toward achieving hemispheric solidarity, and the obligations of farm people in a war economy. Facilities of the more than 3,000 AAA county offices are available to the War and Navy Departments for various war uses.

One of the important jobs performed by the AAA committees, under the direction of State and county War Boards, was the Nation-wide canvass of farms in connection with the 1942 production goals. The canvass reached practically all farmers, and involved drawing up individual farm plans in accordance with national requirements. A similar canvass has been planned in connection with the 1943 program.

## AGRICULTURE'S WAR AIMS

In the final analysis this is a war of large-scale production in which United States agriculture has an unbroken record. Agriculture has set an outstanding example by producing in the greatest abundance even at the risk of overloading the market for farm products. Largely as the result of inadequate buying power in the past, the spotlight has often been played on surpluses when actually the trouble was underconsumption for much of our population.



Agriculture's war aims seek to raise the nutritional standards of all the American people. This is an objective that should also be pursued after the war, as a basic peace aim—one of the Four Freedoms. At the same time, we will have to be prepared to tide a starving Europe over the period of reconstruction.

#### REORGANIZATION

In a move to expedite the contribution the Department is making to the war effort, the AAA organizational set-up was streamlined by the Secretary on December 13, 1941. (See page 26.)

A further move to coordinate the war food program was the establishment of a Food Requirements Committee within War Production Board on June 5, 1942. Through membership on this committee (Secretary Wickard is chairman), the Department has been working in close harness with it, and the AAA has made its total facilities available for the production job.

#### ADJUSTMENT IS NECESSARY

Although the 1942 goals called for the greatest agricultural output in history, that did not mean that farmers could go all-out in the production of every single farm crop without regard to national needs. We already had on hand large supplies of wheat and cotton and fairly large supplies of tobacco and corn. To have let all the bars down on the growing of these crops would have used up valuable land, labor, and equipment for the production of commodities not needed immediately. For example, corn and soybeans compete largely for the same acreage. Had there been no compliance with corn acreage allotments, the acreage available for the production of soybeans would have been drastically curtailed. Likewise, peanuts compete with cotton acreage. Wheat and tobacco compete with many other crops which are more urgently needed to prosecute and win the war.

In brief, the AAA program may be compared to a balance wheel which is designed to swing the pendulum upward on crops that are needed in the war effort and downward on those that are already well stocked or not so vitally needed. It is necessary for farmers to make adjustments among crops, just as industry adjusts its facilities to turning out weapons of war instead of producing automobiles, radios, etc.

#### PROGRAM DEVELOPMENTS

The 1941 program, results of which are embodied in this report, provided for wider latitude in accomplishing greater conservation in areas where feed crops are not generally grown for market, more freedom in earning the soil-building allowance on small farms, reclassification of restoration land, and the addition of soil-building practices better fitted to local conditions.

The 1942 program, the development and operation of which is here reported up to the end of the 1942 fiscal year, was shaped with a keen awareness of the powder-keg condition of world affairs. This awareness led to the adoption of a program of unprecedented abundance for all food, fiber, and oil crops.

While the 1942 AAA program had been fashioned upon a plane of ample production for a nation not yet at war, it was only natural

that, with the increased demands of a nation plunged violently into conflict, some adjustments and changes in the program would be desirable. The fact that the AAA effected these adjustments in the program as the need arose is another indication of the adaptability of the program.

#### MINIMUM CONSERVATION PLANS

The 1942 goal under which a minimum amount of conservation had to be accomplished replaced the old total soil-depleting allotments and was one of the program's chief measures for encouraging greater use of soil-conserving crops. The total allotments were eliminated in order to promote increased acreages of crops called for by the program.

Four types of minimum conservation plans were offered in the 1942 program, and the plan best suited to local conditions was applied to each area. Full payment for compliance with a farm's special crop allotments also was contingent on the full achievement of the soil-conserving goal set up for the farm.

The plans were as follows:

1. Devoting at least 20 percent of the cropland on the farm to conserving crops or uses during the entire 1942 crop year. This plan was applicable in the designated surplus-feed producing areas.
2. Devoting at least 25 percent of the cropland on the farm to erosion-resisting crops.
3. Carrying out a well-rounded farm conservation plan which over a period of years would conserve the soil and increase its productivity. Used in Alabama in 1941, this plan is commonly known as the Alabama plan.
4. Relating soil-building performances to compliance with crop allotments. This plan was used in North Carolina and a few counties in other States in 1941. Under this plan, as under the three outlined above, the payment earned for complying with crop allotments was reduced in the same proportion that soil-building earnings fell below the farm's maximum soil-building allowance.

#### RANGE-CONSERVATION ACTIVITIES

A combination of favorable weather conditions and widespread range-conservation activities of the agricultural conservation program had led in 1942 to excellent range facilities across the Nation, supporting a record number of livestock. This situation was particularly fortunate in view of the tremendous wartime need for livestock products. For the 1942 program year, the range-conservation program was combined with the agricultural conservation program in all 17 range States. Participation continued at the same high level as the year previous.

#### PROGRAM CHANGES

To stimulate the production of oil crops where production goals might otherwise be difficult to reach, soybean and castor-bean seed were included among the conservation materials furnished by the AAA in lieu of payments in limited areas of the South and Southwest.

Another amendment to the 1942 AAA program designed to increase oil crops provided that full payment would be made on the peanut acreage allotment only if at least 80 percent of the allotment was planted. A similar provision was applicable to potatoes. Another

change permitted potato growers to exceed potato allotments by 10 percent before incurring deductions. Also to encourage rice production, a revision provided that 10 times the payment rate be deducted for each acre by which the rice acreage planted was less than the allotment; no deductions were made for overplanting. Furthermore, more flexibility was given the wheat and corn allotment provisions by amendments providing that (1) if wheat acreage totally destroyed by causes beyond the control of the grower was replaced, the original acreage would not be counted as planted to wheat; and (2) corn could be planted on any farm up to 130 percent of the allotment without deduction in payments other than those on corn.

In March 1942, it was announced that AAA regulations would be amended to permit maximum use of volunteer wheat acreage in the Food-for-Freedom program. Farmers cooperating with the AAA program who chose to harvest their volunteer wheat could earn both agricultural conservation and parity payments if (1) their acreage of seeded wheat was within their 1942 allotments and they complied with other provisions of the program; (2) if they stored their volunteer wheat on the farm as long as it was subject to a marketing quota penalty; and (3) if they did not exceed their 1943 wheat acreage allotment. The farm-stored volunteer wheat was eligible for Government wheat loans at 50 percent of the usual rate. Volunteer wheat that was pastured was to be counted toward meeting the conservation requirements under the 1942 program.

Changes in the program helped to obtain the needed expansion in milk, eggs, and other protective foods, while allotments for special crops continued to prevent undue waste of soil and labor in growing crops that were more abundant than the critical war crops.

#### OTHER PROVISIONS

Allotments were provided for the following crops: Corn (in the commercial corn area), cotton, peanuts (other than peanuts crushed for oil), potatoes, rice, tobacco, and wheat. Allotment goals for wheat, cotton, and tobacco (except flue-cured) remained the same as in 1941; flue-cured tobacco allotments were increased 10 percent; corn goals were 10 percent higher to provide plenty of grain for meat production; all restrictions on rice acreage were removed and the goal raised 120,000 acres; and goals were raised for soybeans, peanuts, canning vegetables, potatoes, and flaxseed. The castor-bean program was continued, and price supports were in effect for this crop. Increases of 30 percent in farm gardens and 50 percent in the production of legume seed were called for. Increased acreage of long-staple upland cotton (important in the production of war materials) was encouraged through price support offered in cooperation with the Commodity Credit Corporation.

Marketing quotas were in effect in 1942 for cotton, wheat, peanuts (for edible purposes), and flue-cured, burley, fire-cured, and dark air-cured tobacco.

Crop loans, made available through facilities of the Commodity Credit Corporation and administered locally by AAA committees, were in effect on wheat, corn, cotton, flaxseed, barley, soybeans, rice, grain sorghums, and naval stores. Corn and wheat stored under loans are being used not only for livestock feeding, but for conversion



into alcohol for making synthetic rubber, in order to conserve the sugar and molasses previously used extensively in such production.

#### 1943 PLAN

The program for 1943 places even greater emphasis on production for war needs. It provides that goals will be spelled out in the farm plan, which constitutes a definite commitment on the part of the farmer to produce for war requirements. It provides further that AAA payments will be conditioned upon fulfilling the goals specified in the individual farm plan.

The mechanism for achieving the program's objectives consists of two main parts—the production-adjustment part and the production-practice part. The adjustment phase provides for the establishment of a production-adjustment allowance to be earned by compliance with acreage allotments and by meeting emergency war-crop goals. In order to earn the production-adjustment allowance, the farmer must meet three conditions: (1) Plant within the allotment for wheat, corn, cotton, and tobacco; (2) plant at least 90 percent of the allotment for special crops, except as substitution for such crops is made by war crops and other more essential crops; and (3) plant at least 90 percent of war-crop goals. Thus the production-adjustment payment is definitely a payment for producing for war needs.

The production-practice allowance may be earned by carrying out those conservation practices which are needed most on the farm and which would not be carried out in sufficient quantity without payments.

The 1943 program also places greater responsibility for local adaptation of the program in the hands of local committeemen, who are most familiar with the problems of each area.

#### WARTIME TRENDS IN FARM COMMODITIES

The working out of the goal idea to apply to all farm commodities in the late summer and early fall of 1941 gave special significance to virtually all the things grown by farmers. Then, at the outbreak of war in December, each crop assumed a special spot on the production schedule, depending upon the supply already on hand and the immediate or prospective demand resulting from wartime activity. This production priority focused the spotlight on the A1 war crops, such as oil crops, and ranged down the scale to wheat, which already was amply stocked.

#### WHEAT

The position of wheat in this war has been vastly different from that of the last war, when there was a pell-mell drive to grow more. Now, there is a wheat surplus, and the problem is to find storage for that already produced, to use more wheat for feeding purposes, and to urge farmers to hold down the 1943 wheat acreage and grow more war crops.

While some wheat is grown in every State except Florida, its main production area is in the States constituting the Western Region of AAA.

It was difficult to find storage for the 1941 wheat crop, and the situation was even worse in 1942. Some new storage facilities were constructed but these were not sufficient to ease greatly the storage

problems caused by large carry-overs and near-record crops. The 1941-42 marketing year began with a carry-over on July 1, 1941, of 385 million bushels. To this was added a crop of 946 million bushels. Due to the wartime international situation, very little wheat could be exported, and the carry-over at the close of the crop year was about 630 million bushels. With an indicated 1942 crop of 984 million bushels, the transportation problem to terminal storage points, aggravated by the wartime transportation shortage, is a serious one.

#### INTERNATIONAL WHEAT AGREEMENT

World wheat supplies also continued at an all-time high, with surpluses piling up in Canada, Argentina, and Australia, as well as in the United States. The tremendous world supply, together with the problems emanating from the war, has now resulted in an international wheat agreement that may have far-reaching effects on the future of the wheat industry. Among other things, it provides for a pool of 100,000,000 bushels of wheat for relief purposes in war areas where war conditions permit.

Partly as a result of this agreement and partly because of storage difficulties and lack of shipping space, all of these countries already have instituted measures for the control of excess production. In essence, they have adopted the principle of adjustment upon which the AAA has been operating. They have set up the machinery for a sort of international AAA for wheat, including an Ever-Normal Granary.

#### WHEAT ACREAGE ADJUSTMENTS

A high percentage of the farmers seeded within their 1941 and 1942 allotments (65 and 55 million acres, respectively), but yields were high and carry-overs for 1942 and 1943 increased. Therefore, the allotment for 1943 was again set at 55 million acres, which is the legal minimum. Farmers in 1943, however, have been requested to underseed their allotments by diverting acreage to special war crops.

#### MARKETING QUOTAS

On July 25, 1941, the Secretary proclaimed a marketing quota for wheat for 1942 on the basis of the large prospective supply for the 1942 marketing year. The referendum on May 2, 1942, resulted in a vote of 82.4 percent in favor of the quotas.

With the 1942-43 supply nearly equal to the requirements for a 2-year period, only a crop failure in 1943 could avert another supply well above the quota level. On the basis of this situation the Secretary, in order to inform growers before the seeding of winter wheat, on August 5, 1942, proclaimed a wheat marketing quota for 1943, thus making the third successive year in which marketing quotas have been proclaimed.

#### IMPORT QUOTAS

The import quota on wheat and wheat flour, proclaimed by the President on May 28, 1941, as an additional measure to protect domestic prices, was continued in 1942. Because wheat prices prevailing in this country remained at a level considerably above prices in other wheat producing countries, surplus-wheat countries could

have paid the 42-cent tariff and sold their exportable surplus in the United States at a profit, had there been no import quotas. A limit of 800,000 bushels was placed on wheat imports and a limit of 4 million pounds was placed on imports of wheat flour, cracked wheat, and similar products.

#### WHEAT LOANS

Wheat loans have been very important, along with marketing quotas, in bringing about more general compliance with individual wheat acreage allotments, inasmuch as loans at the full rate have been limited to cooperating farmers. They also have been all-important in helping support prices.

In 1941, a total of 364 million bushels of wheat, or 39 percent of the crop, was placed under loan. It is expected that an even higher percentage of the 1942 crop will go under loan because of the huge supplies, shortage of terminal storage facilities, transportation difficulties, and a higher loan rate.

The 1942 average loan rate of \$1.14 a bushel on the farm, plus the conservation and parity payments of 23 cents a bushel on a farm's normal yield of wheat, is providing the program cooperator a guaranteed average return of about \$1.37 a bushel on his normal production. Some of this return, of course, must be considered as compensation for reducing acreage of wheat in order to produce war crops. The parity price of wheat at the beginning of the 1942 marketing year was \$1.34 a bushel.

Aided by the AAA wheat program, cash income from wheat, including income from marketings and wheat put under Government loan, was estimated at 710 million dollars for 1941, as compared with 727 million dollars for the highly favorable crop year of 1929. Conservation and parity payments made in 1941 are in addition to this cash income.

Wheat payments under the 1941 agricultural conservation program amounted to \$49,121,000. Wheat parity payments totaled \$58,226,000.

#### ENCOURAGING FARM STORAGE

The loan program has been an important factor in easing the storage problem that arose as a result of the record carry-overs and the bumper crops of 1941 and 1942. The Government offers an allowance for farm storage as well as for warehouse storage. Farm storage of wheat under loan has increased from 24 million bushels in 1938 to 117 million in 1941, when nearly a third of the total wheat under loan was stored on farms.

In both 1941 and 1942 an advance against the storage allowance was offered to assist farmers in building or repairing farm storage. In 1942, contracts were let for the construction of wooden bins with a capacity of 100 million bushels. These bins were distributed primarily in the Wheat Belt and sold to producers at approximately 15 cents a bushel of storage capacity. Furthermore, large numbers of steel bins were moved from the corn areas to wheat areas to reduce the load on the transportation system. As a further control of the movement of wheat to terminal markets, a permit system was inaugurated which prohibited the loading of a car of wheat until a known outlet was in sight.



The Federal Crop Insurance Corporation in 1942 insured more wheat farms than ever before, assuring growers guaranteed yields with which to take advantage of higher wheat prices—prices made possible by loans under the national farm program.

#### NEW CHANNELS OF CONSUMPTION

With exports of wheat practically shut off, some new outlets were found in 1942 for the increased supplies brought about by 3 successive years of high yields. An increasing amount of wheat has been used for the production of alcohol for smokeless powder, in place of corn and other grains customarily used by distillers. Furthermore, 125 million bushels of Commodity Credit Corporation wheat has been made available for feed at prices approximating 85 percent of the parity price for corn.

#### CORN

The problems for corn are primarily problems of the North Central Region. Both are tied in with the economic fortunes of the corn outlets, principally livestock and livestock products.

The corn that had been stored in the Ever-Normal Granary, with the 10 percent increase in the 1942 corn allotment to build up feed reserves, stood the Nation in good stead when the war brought about tremendous pressure for more of the meats, animal fats, dairy and poultry products. The subsequent demand for fat hogs and increased feeding of beef cattle has resulted in a larger consumption of corn. Also, the high goals for dairy and poultry products have drawn heavily upon corn supplies.

As a means of relieving feed shortages, caused by local weather conditions or increased feeding operations, corn farmers were permitted to plant up to 130 percent of their corn allotment by forfeiting their corn payments and loan privileges. This did not affect their eligibility for receiving other conservation payments, however.

Corn payments to farmers in the commercial corn area under the 1941 conservation program amounted to \$86,271,000, and corn parity payments totaled \$43,915,000.

#### CORN SUPPLY

In 1942, United States corn farmers planted about 91 million acres of corn as compared with 87 million acres in 1941. The 1942 acreage in the commercial corn area was 43,622,000 acres, and the 1941 commercial acreage was 41,162,000 acres. With a prospective yield in excess of the 1941 average of 31 bushels an acre, the total corn crop in 1942 is expected to exceed that of the previous year by as much as half a billion bushels.

The carry-over for the crop year 1941-42 was about 646 million bushels, and it was expected that this would be reduced in the 1942-43 crop year to about 500 million bushels. Twelve million bushels were shipped to our allies under the lend-lease program during the past year. In addition to feeding the corn currently produced, 150 million bushels, or approximately one-fourth of the reserve stocks, have been withdrawn from the Ever-Normal Granary and used in 1942.

## CORN LOANS

The 1941 corn loan program varied from those previous in two major respects. First, the existing law was changed to provide for loans at an average of 85 percent of parity as compared with the previous maximum rate of 75 percent; and secondly, differential loan rates varying from 69 to 84 cents were established by counties in the commercial corn producing areas based upon the average market price differentials over the preceding 20-year period, 1921-1940.

Because of the price protection offered by loans, during the marketing year, which tended to maintain local prices at near the loan value during that period, and the feed demand for the greatly expanded livestock and poultry production, fewer loans were completed than would otherwise have been secured on the volume of corn eligible for loan.

From December 1, 1941, to July 1, 1942, farmers executed 105,200 loans on 110,250,400 bushels of 1941 corn, amounting to \$80,463,146.

About 85 percent of the corn grown in the United States is used for feeding livestock to produce a plentiful supply of meats, eggs, lard, and dairy products for the people of this Nation and their allies. Corn also is being used to produce explosives, cereals, starch, medicinal preparations, and ethyl alcohol for making synthetic rubber. Some of the "wet process" products, such as corn syrup and corn sugar, are being used as substitutes to preserve our cane-sugar stocks in order to avoid more drastic sugar rationing.

It has not been necessary to apply marketing quotas on corn.

## FEED GRAINS

Crop prospects for feed grains make it obvious that we will have sufficient feed from the 1942 crop for our increased livestock production without withdrawing reserves from the stock piles of the Ever-Normal Granary. It is expected that the production of feed grains will be several million tons greater than last year.

Yields of oats and barley in 1942 are above the average production for the last 5 years. In 1941, the United States produced 358,709,000 bushels of barley from 15,080,000 acres, as against the estimated 416,932,000 bushels from 18,193,000 acres planted in 1942. The production of oats varied from the 1,176,107,000 bushels produced from 39,363,000 acres in 1941, to an estimated 1,331,511,000 bushels from 40,600,000 acres in 1942. Complete figures on grain sorghums are not yet available, but it was assumed that production would be about 131 million bushels, which is approximately 23 million bushels less than the 1941 output.

Another bright side of the feed picture lies in the fact that there were surplus supplies of wheat for feeding purposes, and high-protein meals from flax, soybeans, and peanuts for feed, due to greatly increased production of these crops to supply vegetable oils needed in the war. The total volume of high-protein feeds is expected to rise sharply from last year's figure of 5.8-million tons to 8 million tons.

## COTTON

Cotton is still king in the Southern Region, but the war has given new impetus to the campaign for diversification. The agricultural economy of the South always has been, and will continue to be, founded



upon cotton. However, because of increased cotton yields in recent years under the AAA program and because of large cotton supplies on hand, much cotton acreage has been released for the growing of soil-conserving and war crops. Thus the South is rapidly supplementing its principal cash crops with food and feed crops for home consumption.

Farmers were encouraged in 1942 to grow longer staple cotton in order to meet wartime requirements for longer fiber. Other significant developments in the 1942 fiscal year included record-breaking domestic consumption of cotton, continued low level of exports, substantially improved farm prices for cotton and cottonseed, price ceilings on textiles established under the General Maximum Price Regulations, and end-season stocks of cotton in consuming establishments at an all-time high.

On February 5, 1942, the Department announced plans to encourage increased production of long-staple upland cotton (1½ inch and longer). This was based on an indicated need for increasing the 1942 production by about 700,000 bales over that for 1941 in order to meet additional requirements for this cotton for military purposes and at the same time retain a desired reserve. The program provided for the Commodity Credit Corporation to make loans on the longer staple cottons at premiums higher than existed in the market during the first 6 months of the 1941-42 season. The increased premiums were made in an effort to reduce the loss in the income per acre resulting through shifts from the better yielding varieties of short- and medium-staple length cottons to the lower yielding varieties of longer staple cottons.

The Corporation also announced a purchase program establishing minimum prices for American Egyptian cotton. The Crop Reporting Board's report of August 1, indicated that about 106,000 gross-weight bales would be produced from 196,000 acres planted to American Egyptian cotton in 1942. This compared with 60,000 bales produced on 137,300 acres in 1941. The acreage planted to this cotton in 1942 was limited by the supply of available seed for planting purposes.

Also, as a part of the "good neighbor" policy, agreements were made for the Commodity Credit Corporation to purchase for the duration of the war, part of Peru's cotton crop and the small crops of Haiti, Nicaragua, and, in 1942, certain grades and staples of the Puerto Rican crop.

#### ALLOTMENTS AND PLANTINGS

The 1942 cotton goal and allotment of 27,400,000 acres was the same as the 1941 allotment. However, farmers were asked to increase production (principally longer-staple fiber) this year by planting more nearly up to their allotments. In 1941, due to the supplementary cotton program and an unfavorable planting season, the harvested acreage was 5 million acres under the allotment, resulting in the smallest cotton acreage since 1895. The acreage in cultivation as of July 1, 1942, was estimated at 24,005,000 acres, an increase of 3.8 percent over 1941.

The carry-over of all kinds of cotton in the United States on August 1, 1941, was 12,166,000 running bales, of which 140,000 bales were of foreign growth. The record domestic consumption of 11.2 million bales for the 1941-42 season, together with our foreign trade and other adjustments, left the United States with a carry-over of all kinds of cotton on August 1, 1942, of 10.6 million running bales.

Stocks of 2,252,690 bales of cotton in consuming establishments as of July 31, 1942, were 375,914 bales (20 percent) higher than at the end of the previous marketing year—the highest season-end level in history. They were not considered abnormal in the light of prospective consumption. The highest year-end total reached during the first World War was 1,632,200 bales at the close of the 1915–16 season.

The 1942 indicated crop of 12.7 million running bales, added to the carry-over, pointed toward a supply of 23.3 million bales for the 1942–43 season which would be the second largest supply on record and about 1 million bales under the top year, 1939–40.

#### INCREASED CONSUMPTION

The United States consumed more cotton in the 1941–42 marketing season than in any year in history and the outlook for consumption in the 1942–43 season is about 11.8 million bales—almost twice as much as the average for the 5-year period, 1914–18. The major factor limiting annual consumption to about 12 million bales is the physical capacity of the mills. Military requirements for cotton will prevent a part of the demand for civilian uses from being fully met, which will contribute to the building up of a substantial backlog of consumer demand after the war.

The Department of Commerce in the summer of 1942 prepared a list of 119 cotton products used by the Army; indications are that others will be added. Long-staple cottons are used in making balloon cloth, paratroop uniforms, certain parts of supply parachutes, and other articles in which strong, water-repellent fabrics are needed.

#### COTTON PRICES UP

The farm price of cotton in the 1941–42 season averaged 17.03 cents a pound—more than 7 cents, or 72 percent, above that for the previous year. In addition to receiving 96 percent of parity price for their cotton, farmers also got good prices for cottonseed. (For 15 years, 1926–40, the price of cotton averaged far below parity. Cotton farmers, on an average during that period, received less than two-thirds of the parity price.) It is estimated that cotton farmers received about 1.3 billion dollars for their 1941 crop—the highest cash income since 1929. While this was 41 percent above the previous year and 59 percent above the 1930–40 average, it was 15 percent below the 1923–29 average.

The well-being of cotton farmers cannot be judged solely by comparing the price received for their crop with parity prices. Parity prices do not necessarily mean parity income. In terms of purchasing power of the crop, the 1941 value (based on 10.7 million bales from 22.2 million acres harvested) was less than 6 percent above the 1909–14 average. Furthermore, it is doubtful that the average hourly earning of cotton growers is much in excess of the price of lint per pound.

Cotton payments under the 1941 agricultural conservation program totaled \$97,140,000. Parity payments on cotton amounted to \$87,706,000.

The price paid by mills for cotton used in the 17 constructions of cloth included in the Department's mill-margin calculations averaged 18.36 cents a pound for the season, the highest since 1928–29. The

price of finished goods of the 17 constructions was sufficient to enable cotton mills to operate at a gross margin of 20.55 cents. While mill margins were first tied to the price of raw cotton, and later were limited by ceilings placed on cloth prices, this is the highest annual average of mill margins in the series extending back to the 1925-26 season and 56 percent above the 16-year average. It is also to be noted that this wide mill margin was on the largest volume of mill production in the history of the Nation.

#### LOANS

The Commodity Credit Corporation made loans to cooperating producers on more than 2.2 million bales of the 1941 cotton crop. The loan rate at 85 percent of parity was 14.22 cents a pound (gross weight) for Middling  $1\frac{1}{16}$ -inch cotton. Record-breaking consumption and increased demand for the longer staple and better qualities of cotton resulted in farmers redeeming loans on more than 1.3 million bales. At the end of July 1942, the cotton owned and financed by the Government totaled about 4.4 million bales, as compared with a little more than 6.4 million bales a year earlier.

#### COTTON INSURANCE

Insurance of cotton yields, the second major crop to be included in the Government's insurance program, became effective for the 1942 season. During the fall and winter of 1941, yields and rates were established in 998 cotton-producing counties in 19 States, for an estimated 1,523,000 cotton-allotment farms.

#### COTTON MATTRESS AND COMFORTER PROGRAMS

In the 1942 fiscal year rural families in 46 States made 1,241,220 (50-pound) cotton mattresses and 1,060,425 (4-pound) cotton comforters from the cotton and cover material donated to them by the Agricultural Marketing Administration through the AAA. The total number of mattresses made during the 1941 and 1942 fiscal years was 4,133,999; the number of comforters 1,371,001. The programs are practically completed, with only a little clean-up work remaining in a few areas.

#### TOBACCO

The center of Tobaccoland is in the East Central Region, where about four-fifths of this country's tobacco is grown. Thus, as tobacco goes, so goes the economy of a large percentage of the farmers in the region.

The program for tobacco in the fiscal year 1942 included acreage allotments and marketing quotas to bring about adjustment of supplies; tobacco purchase and loan programs to stabilize prices at fair levels and to provide leaf for lend-lease shipment; diversion of tobacco to the production of nicotine sulphate needed to replace imported insecticides that were unobtainable because of war; and assistance to farmers in obtaining minimum requirements of critical materials necessary for producing, marketing, and storing tobacco.

The whole tobacco program was focused on assistance to farmers in



making adjustments to the changing conditions brought about by the war.

When the Food-for-Freedom goals were established in September 1941, provision was made for reducing the acreage of all kinds of tobacco except flue-cured and Maryland. However, a later appraisal was made of the demand for tobacco in the light of military, civilian, and lend-lease needs, and it was determined that production of most kinds should continue at 1941 levels. In line with increased demand, flue-cured allotments were raised 10 percent, and growers of Maryland leaf were asked to increase their production by 10 percent. Demand for Maryland tobacco has been such that there has been no need for acreage allotments.

Consumption of all types of tobacco continued to increase during the 1942 fiscal year, caused largely by the stress of war, upswing in civilian employment coupled with higher incomes, and lend-lease requirements.

Use of cigarettes, made principally from flue-cured, burley, and Maryland types, increased 14 percent in the last half of 1941 and the first half of 1942. There was an 8-percent increase in the use of snuff, made chiefly from fire-cured leaf, and a slight increase in consumption of chewing tobacco, prepared from flue-cured, burley, cigar leaf, and dark air-cured types. The 5-percent decline in consumption of smoking mixtures was more than offset by the increases in other categories.

A significant change in the program during the year was the excess tobacco carry-over-provision. Under this plan, growers having tobacco in excess of their 1942 allotments could make arrangements with the Commodity Credit Corporation, through the county AAA office, whereby the Corporation would carry over an amount of tobacco equal to the excess. The farmer can offset the excess next year by underplanting his 1943 tobacco allotment in the amount of the actual production of the 1942 excess acreage. This provision for carrying over the excess was necessary because a small quantity of tobacco cannot be carried over satisfactorily by individual farmers. The primary purpose of the provision was to prevent the destruction of small acreages of excess tobacco by farmers, thereby conserving the labor, fertilizer, and equipment used in excess production and making an added acreage available for the production of war crops in 1943.

#### LOANS AND INCOME

Loans remained in effect for all types of tobacco at 85 percent of parity. Only 145 million pounds of tobacco were financed from the 1941 crop as compared with 275 million pounds from the previous crop. The decline is attributed to a smaller crop and increased purchases by domestic manufacturers.

The 1941 tobacco crop returned to growers a gross income of about 332 million dollars, which was exceeded only by returns from the crops of 1918 and 1919. Prices for all types averaged near the parity level.

Tobacco payments under the 1941 agricultural conservation program amounted to \$11,683,000. Tobacco parity payments totaled \$4,580,000.

When shortages of certain materials necessary to the production of tobacco developed during the year, the Department assisted growers and merchants of the tobacco-producing areas in presenting informa-

tion to the War Production Board, which resulted in action making available minimum requirements of the materials needed for 1942. USDA War Boards and AAA committees were active in aiding tobacco farmers in this instance, as well as in others.

#### VEGETABLES FOR PROCESSING

When war came to the United States, it brought with it an urgent demand for maximum production of health-building foods, including most vegetables. As in the case of virtually all other war foods, the farmers of the Nation had been preparing to expand vegetable production through their farm program even in the days of defense preparations. Consequently, when the Department, on December 19, 1941, announced record-breaking 1942 production goals for most major commercial vegetables, together with a program to assist in the realization of these goals, growers in all parts of the United States were in a good position to undertake their part of the agricultural war effort.

Farmers in the Northeast Region of the AAA, where there is a heavy concentration of war industries with the resultant drain on farm labor supply, made a particularly noteworthy contribution to the task of producing enough vegetables to meet the 1942 military and civilian requirements. This is one of the leading commercial vegetable-producing areas in the United States.

Production goals for 1942 called for 40 million cases of tomatoes—a 25-percent increase over 1941 production; 38 million cases of canned peas, one-third more than the 1941 pack; 12½ million cases of snap beans; and 24 million cases of sweet corn. The bean and corn goals were, respectively, equal to and slightly under 1941 packs.

The Department's commercial-vegetable program, in which the AAA played a prominent part, called for support prices for tomatoes and peas to both grower and canner in recognition of the fact that the expanded production would involve far-reaching adjustments in the normal operations of both groups.

By assisting farmers to estimate production costs involved in increasing their tomato and pea acreage and to secure fair contracts with canners, county and community committeemen of the AAA acted as agents of USDA War Boards and contributed materially to the realization of fair minimum prices for growers. The committeemen also helped keep growers informed on developments in the vegetable program. Other agencies of the Department took steps to provide growers with adequate supplies of tomato plants and furnished technical assistance in production problems.

#### POTATOES

Potatoes, in recent years a staple of almost unvarying consumption on the dinner tables of the Nation, have taken on an added significance with the development of the national war-food program. As an energy and vitamin food, potatoes have found new favor with a Nation that is working today as never before in its history. Potatoes are a main item of diet for the expanding armed services.

In the face of this situation, the main objectives of the potato program have been stabilization and maintenance of supply. Much stability has been accomplished by means of the acreage allotments in the program.

The 1942 national potato acreage allotment was 3,060,000 acres. The planted acreage was 2,844,700—about 50,000 acres more than that of 1941. Anticipated demand growing out of the war prompted the formulation of a price-support plan to encourage growers to plant as close as possible to their full allotments. This plan also called for modification of the AAA program to stimulate growers to plant slightly over their allotments. Thus encouraged, growers immediately planted an additional 30,000 acres over earlier reported intentions. Another favorable factor was the continuation of the yield-per-acre trend which has gone up from 131 bushels in 1941 to an estimated 135 bushels this year. As a result, a 1942 national crop of 378 million bushels is expected—an increase of 20 million bushels over that of 1941.

Supporting the AAA acreage-allotment program are a number of plans sponsored by the Agricultural Marketing Administration.

Most important of these, in view of the war situation, is the price-support program for the 1942 potato crop. Announced in March, the program assures growers that the Department will purchase potatoes grading U. S. No. 1 or better in carlots at scheduled base prices ranging from \$1 a hundredweight to \$2.50 a hundredweight. Only those growers who have planted at least 80 percent and not over 110 percent of their AAA acreage allotments are eligible to sell to the Administration.

Growers in the late States also had the alternative of putting their potatoes under Commodity Credit Corporation loans, at price-support rates, with the understanding that the loans must be repaid within a stipulated period or converted into outright sale. This tended to give growers an opportunity to take advantage of market price rises without encouraging speculation.

#### RICE

The war has greatly affected the position of rice. It has raised the price from well below parity to far above it, and has shifted the crop from the surplus to the shortage list. The estimated 1942 acreage was the largest on record—1,481,000 acres, compared with last year's harvest of 1,245,000 acres. Indicated production in 1942, as of August 1, was 74,335,000 bushels. Production in 1941 was 54,028,000 bushels.

Following are the reasons for the increasing importance of rice: The war in the Pacific bars Asiatic rice from its usual markets; there is an associated demand for rice in Cuba, Puerto Rico, and Latin America; rice has been included in lend-lease shipments; and military and civilian demands in the United States have increased substantially. In 1941 all but 7 percent of Cuban imports of rice came from this country; reduction in the Cuban duty on rice under the United States-Cuba Trade Agreement was a factor in the increased exports of rice from this country.

To meet the impending shortage, the AAA in 1942 asked farmers to exceed their rice allotments by 10 percent. If the full allotment was not planted, the producer incurred deductions in his AAA payments equal to 10 percent of the maximum rice payment for each 1 percent of the farm allotment underplanted. Although loans of 85 percent of parity were available to producers who planted within their 1941 rice allotments, very little rice was placed under loan, since the market price averaged almost 20 percent above parity for the marketing year.

Farm value of the crop, exclusive of Government payments, in the



marketing year 1941-42 was \$72,476,000 as compared with \$17,416,000 for 1932-33, when there was a surplus with almost no export demand. Rice payments under the 1941 Agricultural Conservation Program amounted to \$805,000. Rice parity payments totaled \$2,481,000.

#### PEANUTS

Few crops in the history of American agriculture have assumed such importance in so short a time as peanuts. The 1942 acreage for harvest, based on preliminary reports, was approximately 4.2 million acres—nearly twice the acreage of any previous year. The national goal was 5 million acres, including peanuts for both eating and oil purposes—an increase of 155 percent over the 1941 goal.

This increase was in response to the Secretary's call for vast stores of domestic vegetable oils to offset the loss of Oriental oils cut off by the war. Normally, most of our peanut oil, together with cottonseed and soybean oil, goes into food products—oleomargarine, cooking oils, and salad dressing. But because of the great interchangeability of vegetable oils, these domestic oils can be substituted for coconut, palm, babassu, and perilla oil in making soap, glycerin, and lubricants, and for imported drying oils in making paints, varnishes, and certain plastics.

This year thousands of farmers in the 12 peanut producing States responded patriotically to the call for greater production and either started producing peanuts for the first time or increased their acreages. To back up this call with an action program, the Department supported oil prices at 85 percent of the price comparable to parity as of the beginning of the marketing year (August 1, 1941), but in no event less than \$82 a ton for U. S. No. 1 White Spanish peanuts, \$78 a ton for U. S. No. 1 Runner-type peanuts, and \$70 a ton for U. S. Class A Virginia-type peanuts delivered to an approved local receiving agency.

To assure harvesting machinery this fall, the Department, through the War Production Board, arranged for the manufacture of approximately 3,400 mechanical peanut pickers (machines which separate the nuts from the vines after the latter have been plowed up and dried) to supplement those already on hand. These pickers were distributed through the agencies designated to buy oil peanuts, to be moved from farm to farm on a custom-picking basis. These additional pickers were a vitally important supplement to those already on hand in meeting the serious shortages of men and machines this year.

#### MARKETING QUOTAS

The fact should not be overlooked that, besides the demand for peanut oil, the edible market has to be supplied. This is accomplished through marketing quotas, which provide the edible trade with its peanut requirements. Moreover, quotas assure each established producer his fair share of the edible market. The price of edible nuts at 85 percent of parity in May, June, and July 1942 was \$124 a ton. These nuts go into the manufacture of peanut butter, peanut candy, out-of-hand eating, etc. Peanuts grown within the marketing quota (which is the normal or actual production on the allotted acreage, whichever is larger) are sold at the edible price; surpluses of such nuts, as well as those produced in excess of quotas, are crushed for

oil. The 3-cents-a-pound penalty on excess peanuts marketed is not operative if excess peanuts are delivered to one of the agencies designated by the Department to buy oil nuts.

Peanut marketing quotas were approved by producers for 3 years in a referendum held in April 1941. The national marketing quota, as announced by the Secretary, is 627,900 tons, or a national allotment of 1,610,000 acres. Quotas remain in effect to govern any surpluses of peanuts for the edible trade which may occur in future years.

The increase in peanut oil this year will also mean an increase in an important peanut byproduct—the meal which remains after the oil has been extracted. Peanut meal is a high protein concentrate which is a valuable asset to the livestock program, especially in the South.

#### SOYBEANS

The sudden changes in 1942 in planning and producing the soybean crop for war purposes dramatically illustrates why the AAA is called the "Adjustment" program. With the advent of the war and the attendant loss of our Far Eastern supply of vegetable oils, the urgent need for fats and oils in the prosecution of our military program made it imperative that a sure supply be found at home. Swiftly the AAA program was changed to encourage farmers to divert their croplands from less needed crops to soybeans. The farmers' patriotic response was instant and complete.

From a total of 5,855,000 acres in 1941, American farmers under the direction of the AAA increased their acreage to 10,867,000 in 1942. Soybean goals were exceeded by 1,867,000 acres.

Aside from the products used directly in the war effort, such as paints, varnishes, and medicinal preparations, the meal residue from the crushing is a protein concentrate feed for livestock, and reaches the armed forces of this Nation and our allies in the form of meats and dairy products and animal fats and oils. Feeding of soybean meal to livestock saves feed grains, which in turn permits more acreage for other war crops. Meal used for dairy ration will increase the output of cheese and dried milk.

Much progress has been made in using soybeans in plastics and textiles. Also, new food uses are constantly being developed. Soya flour can now be purchased at grocery stores. It is being used in Army rations and is shipped to England under lend-lease. Confectioners now offer packets of processed beans to munch on. The commercial possibilities of soybeans seem to be limited only by the imagination of man.

#### FLAXSEED

A combination of increased wartime needs for linseed oils, plus decreased imports of flaxseed, principally from Argentina, made a flaxseed expansion program necessary for 1942. A goal of 4½ million acres was set up, as compared with the national 1930-39 average seeded acreage of 2.4 million acres. Price assurances were established through a loan program averaging in principal production areas around \$2.20 a bushel on the farm.

An intensive educational campaign was undertaken to present the situation to farmers, pointing out that many could help the war effort by seeding some flax acreage as a substitute for other crops such as wheat. The program resulted in the seeding of an estimated 4,675,000 acres for 1942, mainly in northern states of the Middle West.



## FIBER FLAX

One of the forward-looking moves of the AAA has been the expansion of the domestic fiber-flax industry. Because domestic production of fiber-flax straw for linen is now at a high level, military and naval requirements—such as rigging for parachutes and for special naval requirements—are less dependent on lost imports.

The fiber-flax production program was inaugurated in 1936 and, with the exception of 1938, was continued through the 1941 crop year. In 1941, AAA payments were made to growers at the rate of \$2.08 a ton on a production of 23,997 tons. The 10-year production average (1931–40) was but 3,736 tons of straw a year. The 1941 program originally had been set up to offer \$5.50 a ton on the basis of a production of 9,090 tons. Payments were scaled downward because of the high production.

No payment program was offered for the 1942 crop year. The 1941 production taxed the capacities of retting and scutching plants, and in 1942 efforts were concentrated on enlarging plant facilities. The 1941 crop of 12,658 acres was increased in 1942 to an estimated 19,000 acres, which should increase flax-straw tonnage more than 50 percent.

The Willamette Valley in Western Oregon produces 99 percent of the Nation's fiber-flax straw. The remainder is grown in the States of Washington and Michigan.

## HEMP

The Pacific war was directly responsible for the United States' resumption in 1941–42 of production plans for domestic hemp fiber, a product largely pushed aside the previous half century by fibers imported from India, the Philippines, the Dutch East Indies, and Mexico.

While the war denied this Nation most of its usual fiber sources, at the same time it caused an increased demand for fiber products. The Navy faced serious shortages in cables, cordage, hawsers, and the like. Fiber was also essential on the home front for various industrial and farm purposes. In addition, it was needed for the Army, Maritime Commission, and for lend-lease shipments.

Domestic hemp fiber was the answer, since it makes a satisfactory substitute for both soft and hard fibers although it is neither as cheap nor as strong as some of the imported types. Hemp had been produced on a small scale for several years in Kentucky and Wisconsin, but there was seed enough to plant only 13,000 acres for actual use as fiber in 1942. The rest had to be harvested as seed—part of the extensive hemp-seed production program, started only 1 month after Pearl Harbor. Since Kentucky had produced all the seed grown in recent years, that State's USDA war board was charged with the responsibility of making sure that ample hemp seed was produced in 1942 to plant 300,000 acres of hemp in 1943, or enough for some 150,000 tons of fiber, besides 50,000 acres for seed.

Kentucky's AAA committeemen—assigned the job of encouraging farmers to grow the seed—found 8,000 willing growers who planted almost 40,000 acres. Virtually all the growers signed Commodity Credit Corporation contracts, agreeing to sell the seed produced at \$8 a 44-pound bushel of clean seed. Good stands were the rule and the

crop outlook was better than normal. Barring unexpected reverses, the hemp seed goal of approximately 350,000 bushels should be exceeded. Machinery to bring in and process the 1942 seed and fiber crops was "tight," but appeared sufficient to get the job done as harvest time approached.

While 1942 seed plantings were confined to Kentucky, the 12,000 acres devoted to actual fiber-hemp production were planted in Wisconsin, Minnesota, and Illinois, as well as Kentucky. In 1943, these States will plant most of the 350,000 acres, the goal for fiber hemp, an acreage approximately 30 times that of 1942.

#### WINTER-LEGUME SEED

The winter-legume seed program was inaugurated in 1940 as a means of providing more seed for winter cover crops which protect and enrich the soil, and a source of nitrogenous fertilizer to help compensate for commercial fertilizers not available because of the war. Most of this seed is grown in the Pacific Northwest and used in the Southern and East Central States. Crimson clover, vetch, and Austrian winter field peas are crops included in the program.

Price support through Government purchases was used to encourage production in the 1941 crop year. Its effectiveness was shown in the crimson clover crop, for example, which rose to 8,789,000 pounds in 1941—an increase of 3,155,000 pounds over 1940. The progress under the program may be seen, also, by a comparison of 1936 production of all cover crop seeds (before the program began) and that for 1941, which shows an increase of more than 88 million pounds in the 5-year period. Under the price-support plan, that portion of the crop not acquired by the seed trade was purchased by Commodity Credit Corporation at the guaranteed minimum price, transferred to the AAA, and distributed to farmers in the South and Southeast as conservation materials, the cost to farmers being deducted from forthcoming AAA program payments.

For the 1942 crop year, the "purchase order plan" was inaugurated. Under this plan, the seed trade was enabled to acquire seed in the West at prices at least equal to the price support and to distribute the seed to Southern farmers at fair prices.

It was estimated that upwards of 5 million acres would be seeded to winter-legume crops this fall. This is a tremendous increase over seedings prior to the beginning of the winter-legume program. The 1942 estimated seeded acreage would be the equivalent of at least 85,000 tons of nitrate of soda, or 9 boatloads (10,000 tons each). In view of shipping difficulties in obtaining nitrate of soda from foreign sources, these winter-legume crops will be of vital help to farmers in producing for next year's war needs.

#### CONSERVATION MATERIALS AND SERVICES

Of ever-increasing importance in the agricultural conservation program is the so-called conservation materials and services program, under which the AAA makes certain materials and services available to farmers. The materials and services furnished in this connection are those used in carrying out approved soil-building or soil-conserving practices, and the entire cost to the AAA is later deducted from the farmers' agricultural conservation payments.

In the fall of 1941, the AAA started supplying materials and services, wherever feasible, through the purchase-order plan. Under this plan a fair price is determined for the material or service in accordance with regulations issued by the Secretary, and the farmers may then obtain the material or service from any local vendor who will furnish it at that price. The AAA pays the vendor and later deducts the cost from the farmers' checks. (See table 7, p. 32 for statistical report of materials and services furnished by the AAA).

#### CASTOR-BEAN SEED PRODUCTION

To insure a supply of adapted seed, should the shipping situation from South America and the Orient make domestic production of castor-beans necessary, the AAA, in cooperation with the Commodity Credit Corporation and the Bureau of Plant Industry, undertook a small-scale production program of this seed in a few Texas counties in the spring of 1941.

Early in 1942 the Department's Interbureau Committee on Fats and Oils recommended a castor-bean seed production program for 1942 on a somewhat expanded scale. As a result of the recommendation, 7,975 acres of castor-beans were planted by 3,236 producers in 8 States in 1942.

#### SPECIAL PROGRAM FOR TUNG ORCHARDS

To stimulate the domestic production of tung oil, the soil-building allowance for bearing tung orchards was increased from \$3 to \$5 an acre, and a new allowance of \$5 an acre was set up for nonbearing tung orchards. The purpose of these changes was to induce intensive cultivation of the orchards through use of well-fertilized winter-legume crops. Tung oil is used principally in the manufacture of paints.

#### FARM GARDENS

The war, with its rising prices, shortages of cans, sugar, transportation and labor, has caused many farm families to realize this year that they can grow and preserve their own food more conveniently and economically than they can buy it, and by so doing release processed food needed for fighting men and war workers.

Farmers' reports obtained in the farm defense survey in the fall of 1941 indicated that the acreage devoted to farm gardens in 1942 would be about 9 percent greater than in 1941. (The number of gardens had increased about 4 percent and the average size of garden plots about 5 percent.) After the war, many farm families, and especially those in the low-income groups, will remember what they learned during the war years and will continue to make their farms self-sufficient in the matter of food.

Under the AAA program each family in States where farmers do not already have gardens may earn a payment of \$1.50 by maintaining a year-round garden, growing in it the standard garden vegetables.

#### NAVAL STORES CONSERVATION PROGRAM

The 1941 naval stores conservation program, financed by AAA funds and administered by the Forest Service, was the sixth annual program for gum turpentine farmers. Payments earned under the program, amounting to \$1,583,000, were paid to 4,174 participating



farmers in the States of Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina, and Texas.

During 1941, lend-lease requirements—plus a greatly accelerated domestic demand for naval stores products to replace commodities usually imported—made it necessary to plan for greatly increased production in 1942. An effort is being made to satisfy these war demands, keeping in mind, however, the general objectives of the programs—the conservation of timber resources and the prevention of uneconomic use and exploitation—by requiring producers to adopt approved turpentine practices, such as prohibition of working small trees, better fire protection, and better cutting practices.

### ORGANIZATION OF THE AAA

As a result of the reorganization of the Department, by the Secretary on December 13, 1941, the Agricultural Adjustment Agency,<sup>1</sup> together with the Soil Conservation Service, the Federal Crop Insurance Corporation, and the Sugar Agency, was grouped under the Agricultural Conservation and Adjustment Administration. Each of the four agencies of ACAA, continued to operate as a separate administrative unit, with central offices in Washington, headed by a Chief who is responsible to the Administrator of ACAA.

### FIELD OPERATIONS

For purposes of administering the AAA program, the continental United States has been divided into five regions. Each region embraces a major geographic segment of the country in which the farming operations and agricultural problems fall within a certain range of similarity. The Insular Region includes the insular possessions of the United States.

The operation of the program in each region is in charge of a division director, who reports to the Chief of the AAA.

The regions and the States comprising each region are the following:

**Southern Region.**—South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Texas, and Oklahoma.

**East Central Region.**—Tennessee, Kentucky, North Carolina, Virginia, West Virginia, Maryland, and Delaware.

**Northeast Region.**—Pennsylvania, New Jersey, New York, Connecticut, Massachusetts, Maine, Vermont, New Hampshire, and Rhode Island.

**North Central Region.**—Ohio, Michigan, Indiana, Illinois, Iowa, Missouri, Nebraska, South Dakota, Minnesota, and Wisconsin.

**Western Region.**—North Dakota, Kansas, Colorado, Wyoming, Montana, New Mexico, Arizona, California, Utah, Nevada, Idaho, Oregon, and Washington.

**Insular Region** (Under Special Programs Division).—Puerto Rico, Alaska, and Hawaii.

The AAA also contains a Division of War Board Services, established in 1942, to handle special war problems dealing with farm machinery and supplies, construction, and many other critical phases of wartime agriculture.

Over-all AAA information is handled from Washington, while State and county information functions are performed through State and county AAA committees.

<sup>1</sup> Formerly known as the Agricultural Adjustment Administration.

## LOCAL ADMINISTRATION

The program in each State is under the direction of a State AAA committee, headed by a chairman, who is also head of the State USDA War Board.

At the county level, the program is administered through the AAA county committee, headed by a chairman who serves also as chairman of the county USDA War Board.

In each locality, the program is carried out through community committees. Both county and community committeemen, of whom there are approximately 150,000, including alternates, are farmers elected annually by local farmers.

## FINANCIAL REPORT

The expenditures of the Agricultural Adjustment Agency during the fiscal year ended June 30, 1942, totaled \$686,077,429.18, and were made for the purposes shown in the following tabulation:

Agricultural conservation payments-----	\$436, 066, 933. 97
Parity payments-----	187, 551, 384. 91
Payments under miscellaneous programs-----	167, 222. 17
County association expenses for all programs administered by the AAA-----	45, 476, 942. 16
General administrative expenses in Washington, D. C. and the field for all programs administered by the AAA-----	16, 814, 945. 97
Total-----	686, 077, 429. 18

This tabulation includes expenditures applicable to previous year programs, as well as current year programs.

The total of \$436,066,933.97 (table 1), shown for the agricultural conservation programs, includes payments made under the range conservation program, the naval stores program, and advances for the purchase of conservation materials and services, which advances are deducted from payments earned by producers for their participation in the agricultural conservation program.

The total of \$187,551,384.91 (table 2), represents expenditures in the amount of \$5,210,365.15 on the 1942 parity payment program through June 30, 1942, and expenditures in the amount of \$182,341,019.76 under the 1941 and previous year parity programs.

The above statement does not include payments to sugar program participants under the Sugar Act of 1937.

TABLE 1.—*Payments to producers, July 1, 1941 to June 30, 1942, for cooperating in the agricultural conservation program*

Region and State	1941 program	1940 and previous programs	Total
<b>Southern:</b>			
Alabama.....	\$6,584,055.78	\$532,764.17	\$7,116,819.95
Arkansas.....	13,358,848.05	146,980.76	13,505,828.81
Florida.....	2,457,849.97	137,428.02	2,595,277.99
Georgia.....	10,626,148.32	121,778.82	10,747,927.14
Louisiana.....	5,894,880.71	126,598.43	6,021,479.14
Mississippi.....	15,702,289.19	42,043.27	15,744,332.46
Oklahoma.....	13,913,602.89	154,452.88	14,068,055.77
South Carolina.....	8,716,994.04	37,927.97	8,754,922.01
Texas.....	46,389,046.42	109,708.20	46,498,754.62
<b>Total.....</b>	<b>123,643,715.37</b>	<b>1,409,682.52</b>	<b>125,053,397.89</b>
<b>East Central:</b>			
Delaware.....	525,927.11	1,059.72	526,986.83
Kentucky.....	7,245,958.28	16,833.67	7,262,791.95
Maryland.....	1,746,514.56	11,827.22	1,758,341.78
North Carolina.....	7,554,938.40	96,203.66	7,651,142.06
Tennessee.....	7,094,532.41	1,712.57	7,096,244.98
Virginia.....	2,970,884.09	6,821.80	2,977,705.89
West Virginia.....	672,153.99	-8,013.55	664,140.44
<b>Total.....</b>	<b>27,810,908.84</b>	<b>126,445.09</b>	<b>27,937,353.93</b>
<b>Northeast:</b>			
Connecticut.....	330,459.01	8,021.70	338,480.71
Maine.....	1,112,304.56	3,474.18	1,115,778.74
Massachusetts.....	373,217.11	-956.01	372,261.10
New Hampshire.....	79,835.67	294.58	80,130.25
New Jersey.....	878,117.16	1,753.84	879,871.00
New York.....	3,545,467.54	2,265.21	3,547,732.75
Pennsylvania.....	4,541,931.08	10,260.18	4,552,191.26
Rhode Island.....	22,063.67	150.55	22,214.22
Vermont.....	169,329.24	-1,982.82	167,346.42
<b>Total.....</b>	<b>11,052,725.04</b>	<b>23,281.41</b>	<b>11,076,006.45</b>
<b>North Central:</b>			
Illinois.....	25,334,164.33	-7,162.74	25,327,001.59
Indiana.....	12,966,881.95	-4,791.59	12,962,090.36
Iowa.....	34,802,326.19	-6,280.11	34,796,046.08
Michigan.....	7,567,227.04	2,818.02	7,570,045.06
Minnesota.....	19,109,270.77	549.76	19,109,820.53
Missouri.....	15,789,948.60	4,505.03	15,794,453.63
Nebraska.....	19,267,632.80	-3,437.18	19,264,195.62
Ohio.....	11,032,936.70	-3,590.46	11,029,346.24
South Dakota.....	13,900,718.96	-1,877.94	13,898,841.02
Wisconsin.....	12,295,443.76	-7,635.54	12,287,808.22
<b>Total.....</b>	<b>172,066,551.10</b>	<b>-26,902.75</b>	<b>172,039,648.35</b>
<b>Western:</b>			
Arizona.....	2,011,315.06	3,628.53	2,014,943.59
California.....	9,134,249.98	19,251.19	9,153,501.17
Colorado.....	4,856,608.83	2,650.51	4,859,259.34
Idaho.....	2,844,908.86	8,124.19	2,853,033.05
Kansas.....	19,965,183.98	80,244.38	20,045,428.36
Montana.....	6,618,541.62	-6,434.14	6,612,107.48
Nevada.....	175,946.64	-1,758.29	174,188.35
New Mexico.....	2,772,239.36	5,546.22	2,777,785.58
North Dakota.....	15,741,025.14	21,804.09	15,762,829.23
Oregon.....	3,247,780.05	34,895.93	3,282,675.98
Utah.....	940,412.54	2,022.53	942,435.07
Washington.....	3,008,249.22	-3,638.92	3,004,610.30
Wyoming.....	2,006,739.60	134.07	2,006,873.67
<b>Total.....</b>	<b>73,323,200.88</b>	<b>166,470.29</b>	<b>73,489,671.17</b>
<b>Total continental United States.....</b>	<b>407,897,101.23</b>	<b>1,698,976.56</b>	<b>409,596,077.79</b>
Alaska.....	6,268.10	303.20	6,576.30
Hawaii.....		14,721.95	14,721.95
Puerto Rico.....	823,502.73	26,625.09	850,127.82
Payments not distributed by States.....		86,270.58	86,270.58
Conservation materials advances (1940 and 1941 crop years) not distributed by States.....	234,752.96	1,748.26	236,501.22
Conservation materials advances (1942 crop year) not distributed by States.....			25,276,658.31
<b>Grand total.....</b>	<b>408,961,625.02</b>	<b>1,828,650.64</b>	<b>436,066,933.97</b>

TABLE 2.—*Payments to producers, July 1, 1941, to June 30, 1942, under the parity payment programs*

Region and State	1942 program	1941 and previous programs	Total
<b>Southern:</b>			
Alabama.....		\$7, 186, 019. 91	\$7, 186, 019. 91
Arkansas.....		9, 662, 525. 01	9, 662, 525. 01
Florida.....		252, 852. 95	252, 852. 95
Georgia.....		7, 457, 925. 17	7, 457, 925. 17
Louisiana.....		5, 683, 989. 42	5, 683, 989. 42
Mississippi.....		11, 093, 526. 69	11, 093, 526. 69
Oklahoma.....		7, 689, 626. 92	7, 689, 626. 92
South Carolina.....		6, 026, 667. 65	6, 026, 667. 65
Texas.....		24, 976, 487. 33	24, 976, 487. 33
Total.....		80, 029, 621. 05	80, 029, 621. 05
<b>East Central:</b>			
Delaware.....		145, 484. 71	145, 484. 71
Kentucky.....		735, 701. 37	735, 701. 37
Maryland.....		689, 207. 93	689, 207. 93
North Carolina.....		3, 951, 210. 90	3, 951, 210. 90
Tennessee.....		3, 313, 878. 65	3, 313, 878. 65
Virginia.....		804, 613. 24	804, 613. 24
West Virginia.....		63, 493. 02	63, 493. 02
Total.....		9, 703, 589. 82	9, 703, 589. 82
<b>Northeast:</b>			
Connecticut.....		115, 800. 13	115, 800. 13
Maine.....			
Massachusetts.....		47, 506. 43	47, 506. 43
New Hampshire.....		333. 34	333. 34
New Jersey.....		28, 665. 63	28, 665. 63
New York.....		143, 135. 78	143, 135. 78
Pennsylvania.....		616, 521. 68	616, 521. 68
Rhode Island.....			
Vermont.....		260. 50	260. 50
Total.....		952, 223. 49	952, 223. 49
<b>North Central:</b>			
Illinois.....		11, 103, 356. 09	11, 103, 356. 09
Indiana.....		5, 601, 897. 79	5, 601, 897. 79
Iowa.....		13, 638, 973. 53	13, 638, 973. 53
Michigan.....		1, 313, 439. 28	1, 313, 439. 28
Minnesota.....		5, 794, 908. 69	5, 794, 908. 69
Missouri.....		6, 780, 256. 33	6, 780, 256. 33
Nebraska.....		8, 672, 393. 71	8, 672, 393. 71
Ohio.....		4, 714, 518. 79	4, 714, 518. 79
South Dakota.....		3, 669, 808. 60	3, 669, 808. 60
Wisconsin.....		1, 317, 100. 57	1, 317, 100. 57
Total.....		62, 606, 653. 38	62, 606, 653. 38
<b>Western:</b>			
Arizona.....		1, 296, 757. 99	1, 296, 757. 99
California.....	\$249, 626. 32	4, 234, 339. 43	4, 483, 965. 75
Colorado.....	248, 011. 81	979, 960. 64	1, 227, 972. 45
Idaho.....		1, 312, 365. 91	1, 312, 365. 91
Kansas.....	2, 434, 973. 44	7, 308, 602. 03	9, 743, 575. 47
Montana.....	10, 186. 10	3, 326, 229. 89	3, 336, 415. 99
Nevada.....		26, 583. 91	26, 583. 91
New Mexico.....	123, 452. 62	782, 928. 18	906, 380. 80
North Dakota.....		7, 495, 976. 83	7, 495, 976. 83
Oregon.....	1, 241, 989. 33	429, 665. 56	1, 671, 654. 89
Utah.....	47, 477. 52	308, 998. 48	356, 476. 00
Washington.....	854, 648. 01	1, 221, 360. 18	2, 076, 008. 19
Wyoming.....		196, 635. 74	196, 635. 74
Total.....	5, 210, 365. 15	28, 920, 404. 77	34, 130, 769. 92
Total, continental United States.....	5, 210, 365. 15	182, 212, 492. 51	187, 422, 857. 66
Alaska.....			
Hawaii.....			
Puerto Rico.....		73, 027. 03	73, 027. 03
Payments not distributed by States.....		55, 500. 22	55, 500. 22
Grand total.....	5, 210, 365. 15	182, 341, 019. 76	187, 551, 384. 91



TABLE 3.—*Total expenditures by States July 1, 1941 to June 30, 1942, inclusive*

State	Amount	State	Amount
Washington, D. C.	\$4,008,726.31	Nevada	\$269,869.02
Alabama	16,645,915.30	New Hampshire	473,364.21
Alaska	7,045.80	New Jersey	1,056,802.17
Arizona	3,525,660.19	New Mexico	4,120,858.72
Arkansas	25,188,499.00	New York	6,458,798.61
California	14,932,560.62	North Carolina	14,298,617.48
Colorado	6,854,147.14	North Dakota	24,650,322.91
Connecticut	768,283.48	Ohio	18,737,257.18
Delaware	743,491.80	Oklahoma	23,971,048.01
Florida	3,381,630.50	Oregon	5,594,782.77
Georgia	20,599,496.53	Pennsylvania	7,107,833.47
Hawaii	36,067.69	Puerto Rico	1,262,056.56
Idaho	4,913,191.09	Rhode Island	93,531.26
Illinois	40,634,606.39	South Carolina	16,146,395.53
Indiana	21,170,243.27	South Dakota	19,090,108.57
Iowa	52,355,620.69	Tennessee	14,297,299.18
Kansas	32,356,581.24	Texas	76,844,277.07
Kentucky	11,965,669.13	Utah	1,830,138.10
Louisiana	13,070,015.82	Vermont	1,121,934.72
Maine	1,777,621.40	Virginia	6,605,014.08
Maryland	2,745,490.69	Washington	5,774,515.84
Massachusetts	840,947.40	West Virginia	2,447,131.23
Michigan	11,565,572.77	Wisconsin	16,517,904.15
Minnesota	27,370,451.53	Wyoming	2,582,182.04
Mississippi	28,648,977.94	Undistributed	1,674,248.40
Missouri	26,073,777.04		
Montana	10,591,810.48	Total	686,077,429.18
Nebraska	30,279,036.66		

TABLE 4.—*Special crop acreage allotments under 1941 and 1942 agricultural conservation programs*

Crop	1941	1942	Crop	1941	1942
	<i>1,000 acres</i>	<i>1,000 acres</i>		<i>1,000 acres</i>	<i>1,000 acres</i>
Cotton	27,675	27,485	Tobacco—Continued.		
Corn (commercial)	<sup>1</sup> 37,300	<sup>1</sup> 41,338	Dark air-cured (Types 35, 36)	35.8	36.0
Wheat	62,000	55,000	Virginia sun-cured (Type 37)	3.1	3.1
Potatoes (commercial)	<sup>1</sup> 1,588	2,000	Pennsylvania (Type 41)	30.5	30.5
Peanuts	1,610	1,610	Georgia-Florida (Type 62)	2.9	2.9
Rice	896	1,200	Cigar (Types 42-44, 51-55)	62.0	62.0
Tobacco:			Puerto Rican (Type 46)	35.0	30.6
Flue-cured (Types 11-14)	762.1	843.4	Commercial vegetables	2,500	( <sup>2</sup> )
Burley (Type 31)	380.7	383.0			
Fire-cured (Types 21-24)	84.3	84.8			

Allotments determined only in designated commercial areas.

No acreage allotments determined under 1942 program.



TABLE 5.—*Rates of payment under 1941 and 1942 conservation and parity-payment programs*

Commodity or type of crop	1941		1942	
	Agricultural conservation program	Parity payment program	Agricultural conservation program	Parity payment program
Cotton.....pound..	\$0. 0137	\$0. 0138	\$0. 012	-----
Corn.....bushel..	. 09	. 05	. 055	\$0. 111
Wheat.....do.....	. 08	. 10	. 099	. 135
Potatoes.....do.....	. 023	-----	. 018	-----
Peanuts.....ton.....	2. 25	-----	1. 25	-----
Rice.....cwt.....	. 055	. 20	. 024	-----
Tobacco:				
Flue-cured.....pound..	. 008	. 006	. 005	-----
Burley.....do.....	. 008	-----	. 006	-----
Fire-cured.....do.....	. 015	. 002	. 013	-----
Dark.....do.....	. 01	-----	. 008	-----
Virginia sun-cured.....do.....	. 008	-----	. 006	-----
Cigar (41).....do.....	. 005	-----	. 004	-----
Cigar (62).....do.....	. 01	-----	. 008	-----
Other cigar.....do.....	. 008	. 007	. 006	. 007
General diversion.....acre..	1. 10	-----	-----	-----
General and nondepleting <sup>1</sup> .....do.....	. 70	-----	. 70	-----
Nondepleting (A) <sup>1</sup> .....do.....	. 50	-----	-----	-----
Vegetables (commercial).....do.....	<sup>2</sup> 2. 00	-----	<sup>1</sup> 1. 70	-----
Orchards (commercial) <sup>1</sup> .....do.....	1. 80	-----	2. 00	-----

<sup>1</sup> To be earned by soil-building practices.<sup>2</sup> \$1.30 per acre for not exceeding allotment, 70 cents per acre to be earned by soil-building practices.TABLE 6.—*Rates in 1941 and 1942 for computing soil-building allowances*

Item	Rate in—	
	1941	1942
Cropland (except in orchards) in excess of special allotments, sugar beets and sugarcane, per acre.....	<sup>1</sup> \$0. 70	\$0. 70
Nondepleting acreage in area A, per acre.....	. 50	-----
Pasture and range land.....	( <sup>2</sup> )	( <sup>2</sup> )
Commercial orchards, per acre.....	1. 80	2. 00
Commercial vegetables, per acre <sup>3</sup> .....	. 70	1. 00
Restoration land, per acre.....	. 45	<sup>4</sup> 50
Forestry (planting forest trees), per farm.....	15. 00	15. 00

<sup>1</sup> In areas B and C only (deficit general in crop areas).<sup>2</sup> Varies by areas.<sup>3</sup> Vegetable allotments were established in 1941 but not in 1942.<sup>4</sup> To be earned only by carrying out practices on restoration land.

TABLE 7.—*Conservation materials and services furnished during the 1941-1942 fiscal year*

Material or service	Furnished through—		Material or service	Furnished through—	
	Purchase orders	The AAA		Purchase orders	The AAA
Liming materials.....tons.....		12,838,564	Crimson clover seed pounds.....	30,044	570,785
Mixed fertilizers.....do.....		39,220	Korean lespedeza seed.....do.....	5,410,953	
Concentrated superphosphate.....tons.....		30,721	Kobe lespedeza seed.....do.....	372,811	
Normal superphosphate.....tons.....		649,864	Sericea lespedeza seed.....pounds.....	7,653	
Basic slag.....do.....		74,297	Common lespedeza seed.....do.....	5,689	
Raw rock phosphate.....do.....		9,343	Dallis grass seed.....pounds.....	34,135	
Gypsum.....do.....		2,160	White Dutch clover seed.....do.....	2,622	21,000
Potash.....do.....		1,083	Oat seed.....bushels.....	240,430	
Austrian winter pea seed.....pounds.....	2,895,743	2,672,290	Rye seed.....do.....	3,890	
Hairy vetch seed.....do.....	567,787	2,441,054	Barley seed.....do.....	2,646	
Willamette vetch seed.....do.....	26,400	1,936,779	Kudzu crowns.....number.....	1,684,591	7,382,100
Common vetch seed.....do.....	2,340		Tree seedlings.....do.....		3,160,350
Annual ryegrass seed.....do.....	18,510	2,100,810	Terracing.....linear feet.....	6,272,230	9,634,518

TABLE 8.—*Food-for-Freedom production goals for 1942<sup>1</sup>*

Commodity	Goal	Proportion of 1941	Commodity	Goal	Proportion of 1941
	<i>Thousand</i>	<i>Percent</i>		<i>Thousand</i>	<i>Percent</i>
Milk.....pounds.....	125,000,000	108	Rice.....acres.....	1,320	106
Eggs.....dozen.....	4,200,000	113	Sugarcane.....do.....	( <sup>2</sup> )	( <sup>2</sup> )
Chickens (slaughter).....number.....	644,000	110	Sugar beets.....do.....	( <sup>2</sup> )	( <sup>2</sup> )
Hogs (slaughter).....do.....	83,000	114	Dry beans.....acres.....	2,600	113
Cattle (slaughter).....do.....	28,000	108	Dry field peas.....do.....	665	173
Corn.....acres.....	92,500-95,000	108	Canning peas.....cases.....	38,000	132
Cotton.....do.....	25,000	108	Canning tomatoes.....do.....	40,000	127
Wheat.....do.....	55,000	88	Soybeans.....acres.....	9,000	154
Tobacco:			Flaxseed.....do.....	4,500	134
Flue-cured.....do.....	843	115	Peanuts.....do.....	5,000	255
Burley.....do.....	383	107	Potatoes.....do.....	3,060	110
Other domestic.....do.....	272	104			

<sup>1</sup> Principal commodities.<sup>2</sup> No restrictions; production to processing capacity urged.TABLE 9.—*Participation and estimated gross payments, 1941 conservation program*

State and region	Application farms or ranches	Cropland on application farms	Total cropland in State	Cropland covered	Payees	Estimated gross payments <sup>1</sup>	Average payment per payee
	<i>Number</i>	<i>Acres</i>	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Dollars</i>	<i>Dollars</i>
Maine.....	19,572	1,015,517	1,289,242	78.8	19,573	1,620,736	82.80
New Hampshire.....	8,851	311,963	419,605	74.3	8,851	348,622	39.39
Vermont.....	14,815	898,665	1,056,773	85.0	14,816	992,246	66.97
Massachusetts.....	12,983	378,203	560,955	67.4	13,026	589,646	45.27
Rhode Island.....	1,720	45,307	63,265	71.6	1,722	71,316	41.41
Connecticut.....	9,301	287,308	390,607	73.6	9,421	544,549	57.80
New York.....	74,360	4,939,804	7,850,533	62.9	75,474	4,948,634	65.57
New Jersey.....	12,139	765,052	968,130	79.0	13,039	955,840	73.31
Pennsylvania.....	88,772	5,183,949	7,569,340	68.5	96,211	5,359,665	55.71
Northeast.....	242,513	13,825,768	20,168,450	68.6	252,133	15,431,254	61.20

TABLE 9.—*Participation and estimated gross payments, 1941 conservation program—Continued*

State and region	Applica- tion farms or ranches	Cropland on application farms	Total crop- land in State	Crop- land covered	Payees	Estimated gross payments <sup>1</sup>	Aver- age pay- ment per payee
	<i>Number</i>	<i>Acres</i>	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Dollars</i>	<i>Dollars</i>
Illinois.....	150,580	16,624,186	24,954,104	66.6	180,572	27,491,864	152.25
Indiana.....	128,229	9,845,866	14,576,469	67.5	132,053	14,467,591	109.56
Iowa.....	160,158	19,836,456	25,660,248	77.3	193,987	36,361,137	187.44
Michigan.....	140,043	8,317,428	11,492,858	72.4	114,575	8,136,143	71.01
Minnesota.....	165,583	17,179,074	21,525,901	79.8	168,263	20,110,437	119.52
Missouri.....	208,219	14,587,390	18,584,828	78.5	213,736	17,047,464	79.76
Nebraska.....	115,113	17,508,197	20,909,869	83.7	142,446	19,212,810	134.88
Ohio.....	137,097	8,307,876	13,512,521	61.5	131,463	11,611,227	88.32
South Dakota.....	80,138	15,719,786	16,773,985	93.7	95,248	14,179,661	148.87
Wisconsin.....	171,454	11,528,450	12,806,162	90.0	177,128	13,325,160	75.23
North Central.....	1,456,614	139,454,709	180,796,945	77.1	1,549,471	181,943,494	117.42
Delaware.....	7,414	504,000	590,000	85.4	9,638	597,635	62.01
Maryland.....	22,156	1,727,000	2,460,000	70.2	27,252	2,021,556	74.18
Virginia.....	97,268	4,183,000	5,427,000	77.1	130,339	4,813,762	36.93
West Virginia.....	51,650	1,498,000	2,136,000	70.1	52,166	1,745,499	33.46
North Carolina.....	209,020	7,316,000	8,043,000	91.0	365,785	13,731,135	37.54
Kentucky.....	171,149	10,440,000	11,577,000	90.2	251,589	10,675,183	42.43
Tennessee.....	175,523	8,601,000	9,425,000	91.3	291,368	10,160,427	34.87
East Central.....	734,180	34,269,000	39,658,000	86.4	1,128,137	43,745,197	38.78
Alabama.....	169,500	8,187,000	8,885,000	92.1	274,018	11,235,479	41.00
Arkansas.....	149,600	8,951,000	9,645,000	92.8	265,230	14,762,000	55.66
Florida.....	40,250	1,967,000	2,514,000	78.2	48,204	2,745,104	56.95
Georgia.....	132,000	8,757,000	10,465,000	83.7	230,328	11,860,151	51.49
Louisiana.....	95,400	5,131,000	5,669,000	90.5	181,741	8,194,178	45.09
Mississippi.....	138,400	8,073,000	8,603,000	93.8	319,900	16,540,323	51.70
Oklahoma.....	172,000	14,487,000	17,966,000	80.6	262,064	15,148,700	57.81
South Carolina.....	101,400	5,276,000	5,567,000	94.8	163,585	9,397,638	57.45
Texas.....	379,200	37,199,000	40,751,000	91.3	603,583	49,945,975	82.75
Southern.....	1,377,750	98,028,000	110,065,000	89.1	2,348,653	139,829,548	59.54
Arizona.....	5,932	661,454	818,292	80.8	5,500	2,095,821	381.06
California.....	82,262	6,039,429	9,609,503	62.8	81,992	9,756,212	118.99
Colorado.....	38,649	6,866,681	9,031,649	76.0	42,982	5,069,829	117.95
Idaho.....	26,804	3,311,812	4,675,846	70.8	32,588	3,000,877	92.08
Kansas.....	115,818	22,444,390	28,958,958	77.5	154,700	19,656,047	127.06
Montana.....	29,494	9,264,400	10,967,447	84.5	41,896	6,623,619	158.10
Nevada.....	1,963	251,454	310,788	80.9	1,980	191,033	96.48
New Mexico.....	19,947	1,834,488	2,431,584	75.4	19,661	2,957,135	150.41
North Dakota.....	73,606	22,896,697	23,944,274	95.6	111,550	15,082,249	135.21
Oregon.....	31,915	3,918,785	4,645,300	84.4	35,081	3,398,460	96.87
Utah.....	16,437	1,157,368	1,568,600	73.8	18,582	1,016,720	54.72
Washington.....	32,420	3,937,171	6,832,228	57.6	34,693	3,191,162	91.98
Wyoming.....	10,701	1,850,989	2,204,000	84.0	12,202	2,136,190	175.07
Western.....	485,948	84,435,118	105,998,469	79.7	593,407	74,175,354	125.00
Alaska.....	125	4,244	-----	-----	125	5,150	41.20
Hawaii.....	999	181,220	-----	-----	1,048	109,854	104.82
Puerto Rico.....	61,634	1,080,508	-----	-----	83,232	1,213,846	14.58
Insular.....	62,758	1,265,972	-----	-----	84,405	1,328,850	15.74
Total.....	4,359,763	371,278,567	456,686,864	<sup>2</sup> 81.3	5,956,206	456,453,697	76.63

<sup>1</sup> Includes increases for small payments and decreases for \$10,000 limitation.<sup>2</sup> Excludes insular region.

TABLE 10.—Estimated gross payments<sup>1</sup> in thousands of dollars, by State and commodity or type of practice, 1941 conservation programs

State and region	Cotton	Corn	Wheat	Potatoes	Peanuts	Rice	Vegetables	Tobacco							General diversion	Soil and range building	Restoration land	Naval stores	Total gross payments
								Flue-cured	Burley	Fire-cured	Dark air-cured	Cigar	Pennsylvania	Virginia	Georgia-Florida				
Maine.....	---	---	---	991	---	---	4	---	---	---	---	(2)	---	---	---	626	---	---	1,621
New Hampshire.....	---	---	---	12	---	---	2	---	---	---	---	(2)	---	---	---	334	---	---	348
Vermont.....	---	---	---	12	---	---	---	---	---	---	---	---	---	---	---	980	---	---	992
Massachusetts.....	---	---	---	31	---	---	38	---	---	---	---	---	65	---	---	456	---	---	590
Rhode Island.....	---	---	---	13	---	---	16	---	---	---	---	---	---	---	---	54	---	---	71
Connecticut.....	---	---	---	54	---	---	16	---	---	---	---	---	---	---	---	318	---	---	544
New York.....	---	---	---	372	---	---	256	---	---	---	---	---	---	---	---	4,139	---	---	4,949
New Jersey.....	---	---	---	31	---	---	178	---	---	---	---	---	---	---	---	578	---	---	956
Pennsylvania.....	---	---	---	289	---	---	103	---	---	---	---	---	---	---	---	3,582	---	---	5,360
Northeast.....	---	---	---	1,943	---	---	601	---	---	---	---	---	---	---	---	11,067	---	---	15,431
Illinois.....	23	17,009	1,884	---	---	---	8	---	(2)	73	(2)	(2)	---	---	---	4,529	---	---	27,492
Indiana.....	---	7,916	1,648	---	---	---	6	---	---	---	---	---	---	---	---	2,210	---	---	14,468
Iowa.....	---	24,597	500	---	---	---	2	---	---	---	---	---	---	---	---	6,757	---	---	36,361
Michigan.....	---	769	785	283	---	---	18	---	---	---	---	---	---	---	---	2,639	---	---	8,136
Minnesota.....	---	7,581	1,516	295	---	---	7	---	---	---	---	---	---	---	---	3,622	---	---	20,110
Missouri.....	2,411	5,415	1,576	8	---	---	1	---	---	---	---	---	---	---	---	7,758	---	---	17,048
Nebraska.....	---	9,594	3,325	143	---	---	23	---	---	---	---	---	---	---	---	2,726	---	---	17,048
Ohio.....	---	5,408	1,691	44	---	---	---	---	---	---	---	---	---	---	---	3,577	---	---	19,213
South Dakota.....	---	2,167	2,167	20	---	---	---	---	---	---	---	---	---	---	---	1,605	---	---	11,611
Wisconsin.....	---	2,112	106	203	---	---	8	---	---	---	---	---	---	---	---	6,362	---	---	14,180
North Central.....	2,434	82,561	15,198	996	---	1	80	---	---	---	---	---	---	---	---	46,026	---	---	131,944
Delaware.....	---	94	112	---	---	---	74	---	---	---	---	---	---	---	---	318	---	---	598
Maryland.....	---	402	499	22	---	---	152	---	---	---	---	---	---	---	---	947	---	---	2,022
Virginia.....	---	255	231	169	173	---	111	563	92	226	---	---	---	14	---	2,980	---	---	4,814
West Virginia.....	---	---	---	51	---	---	---	---	19	---	---	---	---	---	---	1,675	---	---	1,745
North Carolina.....	4,874	69	69	110	302	---	55	4,051	68	---	---	---	---	---	---	4,202	---	---	13,731
Kentucky.....	---	128	758	235	21	---	11	---	---	---	---	---	---	---	---	6,608	---	---	10,675
Tennessee.....	3,952	---	122	---	10	---	41	---	---	---	---	---	---	---	---	4,968	---	---	10,160
East Central.....	9,209	1,254	1,319	322	485	---	444	4,614	2,790	1,245	351	---	---	---	---	21,698	---	---	43,745
Alabama.....	7,675	---	(2)	14	167	---	6	3	1	---	---	---	---	---	---	---	---	208	11,236
Arkansas.....	10,281	---	---	3	3	148	---	---	---	---	---	---	---	---	---	3,961	---	---	14,762
Florida.....	---	170	---	56	28	---	3	94	---	---	---	---	---	---	10	1,633	---	---	2,745
Georgia.....	7,468	---	---	4	268	---	---	559	1	---	---	---	---	---	---	2,640	---	---	862
Louisiana.....	5,766	---	---	38	(2)	343	92	---	---	---	---	---	---	---	1	1,953	---	---	8,194







Alabama.....	63, 148	---	---	63, 011	18, 764	33, 854	---	429, 492	148, 601	---	42, 951	---	673, 662
Arkansas.....	42, 708	---	---	37, 354	50, 215	5, 601	26, 188	326, 074	1, 387, 169	18, 007	18, 124	---	1, 813, 378
Florida.....	23, 035	---	---	58, 335	5, 307	39, 797	---	2, 622	304, 552	4, 873	566	---	48, 477
Georgia.....	42, 007	---	1, 764	76, 085	7, 739	4, 498	890	213, 345	08, 804	632	132	---	536, 739
Louisiana.....	9, 458	---	---	3, 645	7, 449	9, 844	---	360, 750	414, 146	---	---	---	447, 722
Mississippi.....	19, 684	---	---	11, 725	23, 228	4, 605	11, 941	765, 319	146, 431	66	1, 349	---	1, 220, 654
Oklahoma.....	584	---	---	7, 312	91, 896	4, 829	77, 691	11, 099	221, 379	14, 593	---	---	346, 539
South Carolina.....	7, 828	---	---	110, 194	5, 088	724	---	108, 739	30, 007	3, 987	---	---	340, 904
Texas.....	5, 906	---	---	---	57, 511	41, 408	84, 358	71, 668	---	28, 099	---	---	313, 051
Southern.....	214, 418	---	1, 764	368, 261	259, 815	145, 160	201, 521	2, 291, 108	2, 721, 270	67, 267	54, 995	---	5, 741, 126
Arizona.....	1, 328	---	---	---	34, 858	700	6, 513	---	---	---	---	---	42, 796
California.....	9, 627	3, 100	26	107, 249	178, 282	16, 384	14, 510	428, 144	---	29	---	---	637, 379
Colorado.....	1, 521	48, 156	---	28, 224	163, 332	1, 536	112, 755	---	---	---	---	354	279, 977
Idaho.....	5, 105	---	---	2, 998	199, 475	17, 193	118, 453	8, 589	---	---	---	---	344, 523
Kansas.....	5, 167	---	---	49, 368	206, 691	583	505, 146	124	---	---	---	---	715, 829
Montana.....	522	194	---	---	143, 719	275, 205	117, 104	---	---	---	---	---	536, 918
Nevada.....	253	45	---	---	18, 036	1, 565	3, 643	---	---	---	---	---	24, 210
New Mexico.....	5, 757	---	---	---	23, 189	4, 155	8, 691	430	---	---	---	---	36, 773
North Dakota.....	48	---	---	---	116, 745	312, 519	675, 001	---	---	---	---	---	1, 105, 449
Oregon.....	14, 986	12, 618	---	18, 708	53, 344	27, 588	97, 520	487, 753	---	---	---	---	1, 666, 669
Utah.....	7, 126	---	---	643	95, 634	8, 031	18, 302	892	---	---	---	---	123, 399
Washington.....	15, 552	162	---	5, 720	59, 634	37, 931	131, 190	27, 567	---	---	---	---	256, 860
Wyoming.....	251	---	---	---	93, 890	72, 342	78, 417	---	---	---	---	---	246, 386
Western.....	71, 243	162	67, 939	188, 006	1, 388, 829	775, 732	1, 887, 275	955, 147	---	29	---	10, 156	5, 017, 108
Alaska.....	1	---	---	---	---	---	36	---	---	13	---	---	49
Hawaii.....	57	45	---	104	---	---	11, 192	---	---	1, 033	---	---	12, 225
Puerto Rico.....	60	53	---	6, 557	---	---	8, 123	---	---	21, 709	---	---	29, 832
Insular.....	118	98	---	6, 661	---	---	19, 351	---	---	22, 755	---	---	42, 106
Total.....	1, 136, 767	13, 488	68, 507	278, 197	5, 769, 703	1, 682, 039	24, 715, 808	3, 712, 463	5, 890, 589	90, 041	55, 646	1, 041, 145	42, 957, 434

1 Less than ½ ton.

2 Estimated on basis of relation of winter legumes to alfalfa in 1940.



















[illegible]

Not available.  
Incomplete to extent of unavailable data for States indicated.

Small amount included in 12-20 inches.

Small amount included in 5-12 inches.

TABLE 11.—*Soil-building and range-building practices carried out, by States, 1941 conservation program—Continued*

Supplemental conservation measures under practice No. 55																			
State and region	Vine- yard re- moval	Drain tiles	Re- moval of dis- eased fruit or nut trees	Straw mulch- ing	Control or elimination of noxious weeds by—		Ro- dent con- trol	Gully con- trol	Reorganization of farm irrigation systems						Liquid ma- nure tanks built		Appli- cation of nitro- genous fertil- izer	Rock and sod check dams	Home can- ning (appli- cant)
					Hand grub- bing or chemi- cals	Mow- ing			Reloca- tion and construc- tion of perma- nent laterals	Lining ditches	Installation of culverts or flumes			Border or corruga- tion irriga- tion	Con- crete	Lum- ber			
											Square yards	Acres	Dollars						
New York	Acres 71	Num- ber 39,006	Num- ber	Tons															
Northeast	71	39,006																	
Illinois																			
Indiana																			
Iowa																			
Michigan																			
Minnesota																			
Missouri																			
Ohio																			1,188
Wisconsin																			
North Central																			1,188
Texas																			
Southern																			
Arizona			75					640											
California		14,608		88			19		900		442	51	1,200	304					
Colorado			1,736				801		20,062				1,812	290			7,180		
Idaho			7,268	682			952		43,722	23			1,800				9,174		
Kansas																			
Montana							4,469		59,839	506	661	11,999	126	43					



Nevada	140	462	58,406	847	102	705	7,614				
New Mexico		84	10,921								
North Dakota											
Oregon	3,458	852						180			
Utah	32,789	178	256,321	2,008	3,157	4,732	4,030				
Washington	21,720	132	4,885	270		445		304			
Wyoming	23,778	71	650,359	10,993	8,671	1,163	163				1,077
Western	62,514	2,769	1,100,530	6,717	14,951	27,592	8,661	304	180	19,846	7,180
Total	71	39,006	62,514	1,088	640	23,197	8,661	304	180	19,846	7,180
											1,077
											1,188

## Supplemental practices, deferred grazing

	New fences	Repair of fences				Pipe lines	Storage tanks built		Pumping facilities	Removal of brush
		Wire	Posts	Rock jacks	Poles		Concrete	Earthen, wooden, or metal		
	Rods	Rods	Number	Number	Number	Linear feet	Number	Number	Number	Square rods
Arizona	101,015	99,696				110,913	40	5	2	
California	359,112	102,020	41,800			124,766	34	73	19	649,626
Colorado	345,239	63,951	33,000			5,189	148	51		
Idaho	123,270	13,430	19,383	69		2,000		3	1	
Kansas	46,517									
Montana	343,455	502,638					18	2		
Nevada	47,679	43,376			10,067	17,480		2	1	
New Mexico	892,264									
North Dakota	78,348					125,746	374	22	20	
Oregon	292,332					200	2	2		
Utah	122,725	139,986	23,149			17,627	14	53	2	51,966
Washington	197,323					20,352	177			
Wyoming	323,573	382,441			2,480	8,753	4	7		10,710
Western	3,274,852	2,059,121	868,842	23,218	12,547	433,026	835	220	45	712,302
Total	3,274,852	2,059,121	868,842	23,218	12,547	433,026	835	220	45	712,302

TABLE 11.—*Soil-building and range-building practices carried out, by States, 1941 conservation program—Continued*

Supplemental practices, deferred grazing											
	Stock trails built		Fireguard in brush	Diversion of hayland	Planting trees for wind- breaks	Riprap- ping	Rodent or insect control	Control of noxious or poisonous plants by grubbing or chemicals	Eradication of cut ants	Lining leaky tanks or reservoirs	Pasturing mountain meadow land
	Blasted rock	Through brush									
	Cubic yards	Square yards	Square yards	Acres	Acres	Square yards	Acres	Acres		Square yards	Acres
Oklahoma							119,049	3,177	25		
Texas								77,765			
Southern							119,049	80,942	25		
Arizona							15,239	139,078			
California	800	25,644	20,791				2,066,688	1,798			
Colorado				3,857	14		397,514	16,905			
Idaho	2,313	21,378					7,000	20			
Kansas							7,900				
Montana	70	10	211				70,000	550			
Nevada							1,600	150			
New Mexico	11 (122,153)		11 (629,180)				50,000	93,417			3,326
North Dakota						520	663				
Oregon	114	2,613					20,000	900			
Utah	1,322	5,333					925	158			
Washington							12,000	444			
Wyoming							34,000			21,579	
Western	4,619	54,978	21,002	3,857	14	520	2,676,529	253,420		21,579	3,326
Total	4,619	54,978	21,002	3,857	14	520	2,795,578	334,362	25	21,579	3,326

Supplemental practices, limited grazing													
	Fences	Repair of fences			Piping water	Constructing reservoirs	Wood-chuck stations	Poisoned oats (for gophers)	Check plots	Weed control			
		Jacks	Posts	Replacing wires						Chemicals and labor	Grubbing	Mowing	Clean cultivation
Kansas.....	Rods 18,161	Number 1,394	Number 29,580	Rods 7,304	Dollars 78	Dollars 1,090	Number 223	Pounds 2,011	Plots 11	Dollars 727	Man-hours 2,544	Acres 21	Square rods 163
Montana.....	7,274												
Western.....	25,435	1,394	29,580	7,304	78	1,090	223	2,011	11	727	2,544	21	163

<sup>11</sup> Linear feet.

TABLE 12.—*Payments, net payments, and average size of payments, by State and commodity, 1941 parity payment program*

[illegible]



Louisiana	159,131				9,140																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														</
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1 Less than \$500.



# REPORT OF THE CHIEF OF THE SOIL CONSERVATION SERVICE, 1942

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL CONSERVATION AND  
ADJUSTMENT ADMINISTRATION,  
SOIL CONSERVATION SERVICE,  
Washington, D. C., September 15, 1942.

MR. M. CLIFFORD TOWNSEND,  
*Administrator, Agricultural Conservation and  
Adjustment Administration.*

DEAR MR. TOWNSEND: I am sending you herewith the annual report of the Soil Conservation Service which covers the period beginning July 1, 1941, and ending June 30, 1942.

Sincerely yours,

H. H. BENNETT, CHIEF.

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## HOW CAN WE HELP WIN THE WAR?

How can we help win the war? This was the question the Soil Conservation Service employees asked themselves on December 7, 1941. When the war began, conservation was being fitted to the land more rapidly than ever before. More conservation districts were working. More farmers and ranchers were protecting their land resources with practices that were parts of complete soil-saving, soil-improving, water-conserving systems. More erosion-scarred acres were being healed. More idle acres were being restored to permanent, profitable usefulness. In every State, conservation was spreading across more land of every type.

But soil conservation had not moved fast enough—even in normal peacetime. Land was being worn out faster than it was being saved, although a day could be foreseen when land-saving would catch up with and then pass land-wasting—if normal conditions continued.

Total defense and then total war swiftly changed the course of action of the whole Nation. Agricultural production went into high speed. And soil conservation had to reach millions of additional acres immediately, else there would be less good land each succeeding year to produce food for freedom, and much less land to grow the food that would write the peace.

As the Service had progressed in soil and water conservation, its conception of its objectives had been sharpened, and its responsibilities broadened. Soil conservation had come to mean the safeguarding of productive land, to the limits of economic practicability, against impoverishment and depletion through: (1) Excessive soil removal by wind or water, (2) excessive leaching, (3) accumulation of toxic salts, (4) burning (in the case of organic soil—peat), (5) waterlogging, (6) improper cultivation—or any other cause in the nature of improper use of or failure to protect the land from loss of its productiveness.

Achievement of soil conservation, then, involves erosion control and prevention, the conservation and utilization of rainfall, the prevention of accumulation of toxic salts and waterlogging by drainage, the prevention of burning of organic soils, and the prevention or reduction of leaching, by means of improved tillage, mulching, and good cropping practices; and encouraging shifts in the use of highly erodible land to grass, trees, or other protective cover, by substitution of land better adapted to cultivation through drainage, clearing, and more intensive culture of less-erodible lands.

In the war effort the Soil Conservation Service is doing its part. The agricultural production problem was attacked on three fronts. The first front was in critical areas where increased acreages of war crops complicated the soil-erosion problem.

Some crops that had to be doubled and even trebled in acreage were erosion-inducing, as commonly grown. For example, peanut production on certain otherwise good peanut land would cause more soil washing and blowing than the growing of any other war crop. Critical areas were thus developed in sections with soils adapted to peanut culture. The solution of the problems in critical areas was given first priority.

Surveys were made in every county where Department of Agriculture War Boards had asked farmers to grow more than 1,000 acres of peanuts. Treatment necessary to control erosion while peanuts were grown was recommended to the War Board of each county, and erosion-control job sheets were prepared for use by peanut growers. This information helped later in necessary revision of goals for 1943.

The second front had to do with the areas of conservation districts where the conservation program was reshaped to fit war conditions. If there was any question as to the place of a soil conservation district in a democracy, war conditions have answered it: Farmer-organized, farmer-controlled soil conservation districts are democracy in action on the land, and are vital to the Nation in time of peace or war.

Soil- and water-conservation progress in districts was greater than that of any other year. On June 30, 1942, Soil Conservation Service technicians were aiding farmers and ranchers in 653 districts, comprising 395,376,015 acres. Since the district program began, over 126,000 farm and ranch conservation plans had been prepared for 29,500,000 acres. (See tables 1 and 2.) Each conservation plan helped the owner or operator to meet Food-for-Freedom goals with



minimum damage to the land. Each conservation plan enabled the farm family to grow as much of its own food as possible. Each plan assisted the owner or operator to produce as many different crops, or as many kinds of livestock, as the land can support well year after year with adequate conservation treatment. It enabled the operator to adjust production to the ability of the land, thus safely meeting the needs of the United States and her Allies during the war. Putting conservation practices in operation on the land has been a first-priority job in the regular district program. At the close of the fiscal year, 771 soil conservation districts, comprising 451,990,000, acres had been organized.

The third front of the agricultural production war is very broad, covering all farms and ranches both inside and outside the conservation districts. To help farmers in general meet the problem of producing for war use a simple-practices program was instituted with the help of the Extension Service and members of the county USDA War Boards. Service technicians (1) cooperatively developed a list of simple practices for erosion-problem areas, (2) cooperatively prepared guides for applying simple practices on different kinds of lands, (3) cooperatively prepared simple specifications or job sheets for practice application, (4) helped county agents explain the program to district supervisors and members of county USDA War Boards, and (5) cooperatively developed procedures for carrying the program to all farmers. With few exceptions, the Service's contribution to the simple-practices program ended with step (5). In some instances, technicians conducted field demonstrations. The simple-practices program was used effectively in the critical areas.

These were some of the ways the Soil Conservation Service contributed to the war effort during the past year. The Service enlisted wholeheartedly in the effort to build up the Nation's defenses and when war came on December 7, completely streamlined its organization and went on a war footing. Let us look, in a little more detail, at the work the Soil Conservation Service has been doing during the year.

TABLE 1.—Number and area of work units in which the Soil Conservation Service had worked or cooperated, by region and State, as of June 30, 1942

Region and State	Soil conservation districts		Demonstration projects		Land-utilization projects		Farm-forestry projects		Nursery projects	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres	Number	Acres
<b>Region 1:</b>										
Connecticut.....	.....	.....	.....	72,000	.....	.....	.....	873,835	.....	.....
Delaware.....	.....	.....	1	45,210	1	15,320	.....	.....	.....	.....
Maine.....	.....	.....	1	30,000	1	1,140,000	.....	.....	.....	.....
Maryland.....	10	3,048,000	2	66,730	.....	.....	1	120,000	1	200
Massachusetts.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Hampshire.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Jersey.....	4	3,043,000	3	71,190	.....	.....	1	944,489	.....	.....
New York.....	11	5,180,000	3	205,230	1	49,000	.....	.....	2	347
Pennsylvania.....	4	1,096,000	5	273,926	2	85,706	1	336,640	1	74
Rhode Island.....	.....	.....	.....	.....	.....	.....	.....	208,000	.....	.....
Vermont.....	4	2,201,000	1	65,250	.....	.....	.....	.....	.....	.....
West Virginia.....	6	2,859,000	2	180,750	1	60,000	3	1,487,720	.....	.....
<b>Total.....</b>	<b>39</b>	<b>17,517,000</b>	<b>19</b>	<b>1,010,286</b>	<b>6</b>	<b>1,350,026</b>	<b>10</b>	<b>4,155,004</b>	<b>4</b>	<b>621</b>
<b>Region 2:</b>										
Alabama.....	12	32,819,000	4	202,879	1	11,364	1	2,322,560	1	181
Florida.....	11	6,093,000	3	53,440	1	122,280	1	637,200	.....	.....
Georgia.....	19	23,994,000	5	253,333	4	898,300	1	217,600	1	300
Kentucky.....	17	3,021,000	3	83,880	1	20,300	.....	.....	1	67
Mississippi.....	34	16,281,000	6	327,396	3	463,546	2	1,223,139	.....	.....
North Carolina.....	15	17,839,000	8	492,258	1	257,280	.....	.....	.....	.....
South Carolina.....	13	13,713,000	6	282,795	.....	.....	1	704,000	1	210
Tennessee.....	16	4,471,000	2	64,829	1	4,500	1	379,115	.....	.....
Virginia.....	13	13,352,000	5	238,800	.....	.....	1	973,260	1	184
Puerto Rico.....	.....	.....	1	2,231,040	.....	.....	.....	.....	.....	.....
<b>Total.....</b>	<b>150</b>	<b>131,583,000</b>	<b>43</b>	<b>4,290,650</b>	<b>12</b>	<b>1,777,570</b>	<b>8</b>	<b>6,456,874</b>	<b>5</b>	<b>942</b>
<b>Region 3:</b>										
Illinois.....	14	2,796,000	4	322,081	.....	.....	.....	.....	.....	.....
Indiana.....	12	1,114,000	3	92,799	1	32,600	2	994,287	1	60
Iowa.....	20	6,501,000	7	358,573	.....	.....	1	409,000	1	50
Michigan.....	9	1,360,000	3	102,048	3	347,000	1	184,200	1	107
Minnesota.....	12	2,481,000	7	193,242	1	3,426,560	2	134,880	1	80
Missouri.....	.....	.....	4	231,397	1	258,820	2	2,993,600	1	273
Ohio.....	.....	.....	5	263,844	.....	.....	1	441,932	1	204
Wisconsin.....	24	12,335,000	4	235,289	.....	.....	1	525,440	.....	.....
<b>Total.....</b>	<b>91</b>	<b>26,587,000</b>	<b>37</b>	<b>1,799,273</b>	<b>6</b>	<b>4,064,980</b>	<b>10</b>	<b>5,683,339</b>	<b>6</b>	<b>774</b>



TABLE 2.—Farm and range conservation plans prepared to date by Soil Conservation Service technicians in areas within which the Service had directed the programs and in which it was cooperating as of June 30, 1942

Region and State	Soil conservation districts		Demonstration projects		Soil Conservation Service and Civilian Conservation Corps camps		Soil Conservation Service—Extension Service demonstrations		Agricultural Administration and Farm Security Administration projects		Other <sup>1</sup>		Total	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres	Number	Acres	Number	Acres	Number	Acres
<b>Region 1:</b>														
Connecticut.....	101	13,615	101	13,615	1	127	33	6,833	3	298	137	20,746	137	20,746
Delaware.....	99	11,847	99	11,847	1	127	33	6,833	1	97	121	16,707	121	16,707
Maine.....	298	38,757	298	38,757	390	43,403	42	6,548	5	697	352	47,281	352	47,281
Maryland.....	133	16,764	133	16,764	390	43,403	7	2,679			1,384	205,713	1,384	205,713
Massachusetts.....							37	11,036	4	784	37	11,036	37	11,036
New Hampshire.....	276	25,085	276	25,085	451	64,994	16	3,838			20	4,622	20	4,622
New Jersey.....	656	91,647	656	91,647	1,440	200,821	13	1,373	2	179	1,965	174,220	1,965	174,220
New York.....	982	110,165	982	110,165	1,677	193,545	66	11,848	345	50,353	2,828	387,170	2,828	387,170
Pennsylvania.....	334	74,299	334	74,299	1,663	251,704	17	2,165	3	429	3,912	454,894	3,912	454,894
Rhode Island.....	1,578	229,945	1,578	229,945	1,663	251,704	4	783	3	490	38	7,962	38	7,962
Vermont.....							95	19,861			31	4,030	31	4,030
West Virginia.....							349	71,353			248	41,816	248	41,816
Total.....	5,278	730,804	5,278	730,804	5,652	754,594	349	71,353	366	53,327	14,920	2,015,162	14,920	2,015,162
<b>Region 2:</b>														
Alabama.....	6,921	1,349,357	957	152,412	2,151	404,206	144	41,738	16	2,872	10,189	1,950,585	10,189	1,950,585
Florida.....	1,058	201,346	244	28,606	855	184,909	2	1,373	15	2,808	6	175	6	175
Georgia.....	9,881	2,092,981	1,126	151,224	2,108	393,093	68	23,980	11	1,527	22	3,727	11,952	2,396,821
Kentucky.....	6,276	1,133,612	342	32,443	2,108	393,093	1	91			2	1,081	3,231	561,847
Mississippi.....	11,722	1,311,553	915	146,698	2,218	428,062	57	13,639	57	2,839	9,466	1,728,629	9,466	1,728,629
North Carolina.....	7,451	1,249,434	2,846	267,766	3,433	452,442	130	13,655			18,188	2,048,255	18,188	2,048,255
South Carolina.....	1,049	162,634	235	160,523	2,250	374,161	15	5,299			11,314	1,797,295	11,314	1,797,295
Tennessee.....	3,419	723,060	886	117,485	1,617	299,272	72	16,769	2	310	21	390,774	21	390,774
Virginia.....			838	7,154			35	2,122	12	551	1	157,000	1	157,000
Puerto Rico.....											2,872	12,883	2,872	12,883
Virgin Islands.....														
Total.....	48,483	8,303,407	9,904	1,087,817	15,649	2,735,666	524	118,666	113	10,907	3,007	31,761	77,680	12,288,224
<b>Region 3:</b>														
Illinois.....	680	107,701	765	123,176	3,552	555,398	207	42,701			74	5,078	5,278	834,054
Indiana.....	479	61,588	171	22,034	1,874	282,308	29	4,890			45	8,379	2,598	379,219
Iowa.....	395	110,396	881	133,791	3,113	509,684	127	23,556			99	19,395	4,815	797,022
Michigan.....	1,365	115,880	264	19,692	23	2,223	71	15,961	2	303		948	1,729	155,007
Minnesota.....	1,195	218,508	440	61,724	1,251	207,998	60	13,778			126	4,108	3,072	506,116



Missouri.....	1, 138	162, 600	2, 830	488, 544	173	36, 019	1, 764	98, 492	5, 905	785, 655
Ohio.....	911	100, 112	3, 094	474, 538	107	18, 988	66	16, 977	4, 202	615, 717
Wisconsin.....	629	74, 820	1, 598	250, 972	113	18, 868	1	180	6, 121	978, 787
Total.....	5, 199	697, 969	17, 335	2, 771, 665	887	174, 761	2, 179	153, 557	33, 720	5, 051, 577
Region 4:										
Arkansas.....	1, 068	132, 093	2, 019	329, 089	47	8, 753	14	17, 617	21, 539	2, 690, 389
Louisiana.....	807	125, 403	1, 429	297, 052	42	7, 993			9, 803	1, 490, 879
Oklahoma.....	1, 938	298, 651	4, 397	628, 505	292	63, 989	367	116, 320	20, 879	3, 666, 045
Texas.....	1, 839	353, 365	7, 786	2, 289, 672	142	126, 160	806	614, 583	18, 512	6, 942, 756
Total.....	5, 712	879, 512	15, 631	3, 544, 318	523	346, 895	1, 187	748, 520	70, 733	14, 790, 069
Region 5:										
Kansas.....	1, 768	439, 101	1, 361	339, 390	126	67, 955	297	154, 654	4, 423	1, 279, 343
Montana.....	1, 197	1, 012, 542	45, 690	108, 606	69	132, 135	46	170, 110	1, 783	1, 478, 749
Nebraska.....	245	746, 810	44, 375	439, 510	120	28, 084	100	135, 464	5, 389	1, 390, 243
North Dakota.....	1, 366	33, 542	1, 965	91, 279	57	28, 967	131	38, 099	2, 875	1, 061, 604
South Dakota.....	349	89, 292	498	188, 211	89	72, 116	278	435, 704	4, 136	2, 016, 555
Wyoming.....	183	117, 436			71	327, 245	15	72, 234, 395	1, 067	3, 171, 927
Total.....	11, 396	4, 286, 443	4, 112	1, 166, 996	532	652, 502	1, 843	3, 658, 426	19, 873	10, 392, 421
Region 6:										
Arizona.....	362	1, 822, 280	21	116, 048	9	1, 245	126	3, 508, 010	543	5, 451, 063
Colorado.....	553	606, 670	641	1, 077, 667	61	169, 575	200	442, 668	2, 764	4, 042, 635
New Mexico.....	1, 154	3, 036, 799	1	1	35	387, 414	126	1, 752, 758	2, 379	8, 726, 150
Utah.....	339	104, 642	9	16, 624	1	74	203	773, 229	1, 650	1, 208, 112
Total.....	2, 428	5, 570, 391	672	1, 210, 374	100	558, 338	655	6, 476, 665	7, 536	19, 427, 960
Region 7:										
California.....	177	26, 017	1, 312	194, 017	247	152, 316	451	60, 814	3, 047	686, 470
Idaho.....	586	307, 473	552	233, 485	141	123, 732	208	358, 943	1, 575	1, 047, 459
Nevada.....	370	119, 338	35	2, 265	65	53, 341	29	476, 248	569	661, 458
Oregon.....	103	35, 962	328	461, 793	275	163, 558	120	1, 500, 112	995	2, 207, 283
Washington.....	738	259, 972	666	460, 939	153	299, 741	77	19, 867	2, 121	1, 175, 141
Alaska.....										
Hawaii.....	16	1, 208			25	2, 022	28		44	3, 258
Total.....	1, 974	748, 762	2, 893	1, 352, 499	906	794, 710	885	2, 415, 984	8, 951	5, 781, 069
United States total.....	126, 042	29, 489, 593	61, 944	13, 536, 112	3, 821	2, 717, 225	10, 004	13, 526, 729	233, 413	69, 746, 482

<sup>1</sup> Includes farm and range conservation plans for (1) drought relief; (2) water facilities and farm forestry outside of districts, demonstration projects, and SCS-CCC camp areas; (3) farms and ranches to which permits have been granted to use lands acquired in submarginal land-utilization projects; and (4) public lands, inclusive of those prepared prior to June 30, 1940, for lands under the jurisdiction of the Department of the Interior.

## CONSERVATION INCREASES PRODUCTION

## IN THE NORTHEAST

In the Northeast the contribution of the Service to the food-production program is showing up in increased yields on farms where conservation practices are in effect. Our technicians have been active in spreading information about the increased yields resulting from use of conservation practices and in helping farmers plan and install such practices.

Great progress has been made in every State in this section. In Maine better pastures have enabled farmers to increase milk production. In New York areas of submarginal land have been made productive. In the Winooski Valley, Vt., long a critical area, erosion has been largely controlled and production has gone up. During the heavy rains of June 16, 1942, erosion-control practices afforded real protection to croplands in this area. A comparison of the cultivated fields protected by erosion-control methods with fields not protected showed the value of conservation. According to one technician:

The diversion ditches, terraces, and water-disposal systems were really given a chance to do their stuff—and they did. Numerous outlets showed their high-water mark by the way the grass was flattened out, and by this proved they had intercepted and carried off much surface water.

Farmers generally throughout the Northeast reported better control of erosion and better crop yields. R. M. Johnson, Walpole, N. H., said that soil- and water-conserving practices have increased potato yields in both wet and dry years. His 127-acre farm is worth \$50 more an acre for potato production under the contour system than under the old system. Another farmer, Walter Wright of Pennsylvania, said:

Contour strip-cropping has increased my yield by 50 percent. I can feed twice as many cattle and feed them better than I could 5 years ago. Increased pasture and contour furrows and alfalfa, have also contributed to this.

Numerous surveys and studies have been made during the last year which indicate that conservation increases yields generally. For example, in western Pennsylvania, on 48 farms whose operators are cooperating with the Soil Conservation Service, the production of digestible nutrients in 1938 as compared with 1934 was increased to a greater extent than on farms of 58 noncooperators in the same area, in spite of a greater reduction in the acreage of intertilled crops.

Milk production per cow on farms of cooperators increased by 1,000 pounds during this period, while the production per cow of dairy herds on farms of noncooperators remained approximately unchanged. Total milk production increased by 12 percent on the farms of cooperators and less than 5 percent on farms of noncooperators. These differences are attributed to the increased quantity and improved quality of hay and pasturage on the farms of cooperators.

## IN THE SOUTHEAST

The Southeastern States have long been afflicted with soil erosion and floods. Here the story of gullied fields and an impoverished people is an old one. Land in this region was abandoned over a hundred years ago because of soil washing. But recently the South has made a comeback, and in some Southern States it is now estimated that 90 percent of the land has been contoured.

The work-unit technician in the Greenville County, S. C., soil conservation district made the following statement:

Farmers who practiced good conservation farming increased their yields by 25 percent and cut the cost of production approximately one-third. Where conservation practices were in effect it was noticeable that the production of meat, milk, and other needed food products was increased. As an example, Alex Stokes, a farmer of Jordan community, S. C., produced 21 bales of cotton on 16 acres in 1941. Previous to the installation of a soil conservation program, Stokes seldom raised more than a bale of cotton to the acre.

On the farm of Dillard G. Watson, of Anderson, S. C., as a result of an improved pasture and feed crops program, the number of cattle increased in 4 years from 2 milk cows to 95 purebred Angus beef cattle in addition to work stock. Mr. Watson planted 30 acres of cotton with an average annual yield of 40 bales, 1 acre of corn, and the rest in small grain. All feed was produced on the farm. He said that the soil conservation program is unquestionably responsible for the increased production.

D. J. Lay, another South Carolina farmer, reports that 5 years ago he had hardly enough hay to meet farm needs. After establishing soil conservation practices he not only had sufficient hay for his needs but also sold \$2,000 worth.

Numerous cases of increased production as a result of the establishment of conservation practices could be cited. In Rockingham County, S. C., 200 acres of idle land was converted to improved pasture that now furnishes seasonal grazing for 190 dairy cows. A total of 250 acres of idle land was converted to perennial hay crops that will produce enough hay for 200 cows.

In Richmond County, N. C., the acreage of crotalaria has been expanded from 160 acres in 1936 to approximately 30,000 acres in 1941. As an example of returns from crotalaria as a soil-conserving crop, Tede Sheppard, a tenant on the farm of F. B. Garrett, near Rockingham, produced 26.4 bushels of corn following a crop of crotalaria on a field of very poor soil that had previously made only 3 to 5 bushels an acre.

Aubrey Eidson of Lineville, Ala., grew 53.7 bushels of corn an acre following sericea lespedeza in 1941. The sericea was planted on severely eroded cropland in 1936 in cooperation with the CCC camp. The land would have produced less than 10 bushels of corn an acre at that time. The lespedeza was harvested for hay each year during the 4 years 1937-1940, inclusive. Mr. Eidson made about the same amount of corn in 1941, after the land had been in sericea 5 years, as he would have made altogether if the land had been in corn each year. In addition the land was protected against erosion, fertility of the soil was increased, and hay crops were harvested for 4 years.

B. B. Hughes of Stoney Point, S. C., produced 33.1 bushels of corn an acre following kudzu, compared with 4.7 bushels on an adjoining area in the same field where no kudzu was grown. This was a seven-fold increase where soil fertility had been restored under a cover of kudzu.

#### IN THE WESTERN GULF REGION

Farmers in Louisiana, Texas, Oklahoma, and Arkansas, as elsewhere, have given wholehearted support to the war program for increased production. But they are using judgment in the way they seek this increased production. During World War II thousands of



farmers are cultivating only those lands that are adapted for cultivation. They are farming on the contour. They are using terraces, strip cropping, and other well-proven measures to protect their land from torrential rains. Under the present soil conservation district program the Government is furnishing the necessary services in surveys and plans for the farmer to follow in carrying out the program with his own labor, equipment, seed, and any other required materials.

The Soil Conservation Service nursery 4 miles south of Sibley, La., on State Highway No. 90 is operated primarily for the production of tree seedlings, kudzu plants, and the seed of early-maturing crotalaria, several lespedezas, and a few grasses. Most of the material is planted on the lands of farmer-district cooperators. The remainder is planted on Government-owned lands operated by the Soil Conservation Service, and in a very small degree on lands of cooperating State and Federal agencies. In addition to the production work this nursery has been doing some valuable observational work on grasses and legumes. For example: The promising soil-binder and pasture grass strain T-1458a, recognized scientifically as *Chloris latistachya* and commonly as Foster fingergrass, was discovered and developed at this nursery. Another grass of the same genus, *Chloris gayana* or Rhodes grass, which is famous for its soil-binding and beef-producing qualities on the King ranch in Texas, is being developed for winter hardiness at Sibley.

Similar work is being done at the San Antonio nursery, where some promising new grasses (new in the sense of being seeded) are being developed. One of them—slender grama—is now being carried out to regional ranches for practical tests.

As a result of work through drainage camps in Louisiana, thousands of acres not previously used for agricultural purposes may now be cultivated; improved drainage also made possible a higher yield per acre from lands already being cultivated. When the CCC camp was closed at Ville Platte, camp officials reported:

Approximately 200,000 acres were drained, which comprised about 2,000 farms. This work proved to be of great value. Many areas on which crops were frequently ruined by floods in the past, were made more valuable by the certainty that normal rains up to and including 2 inches in 24 hours would readily run off without damage to crops.

It has been estimated that the CCC drainage camps assigned to the Service have completed work throughout the country which has brought back into cultivation, or increased the productivity of, 13 million acres.

Food is being produced today on land which a few years ago was almost ruined by erosion. Two of such submarginal-land areas in Louisiana are now protected by grasses and other forage plants. The pasture is leased to local farmers for grazing purposes, and from it, approximately 180,000 pounds of milk and 44,400 pounds of beef have been produced.

Here are some of the benefits recently reported by Louisiana farmers who have applied a complete soil and water conservation program:

M. S. Daugherty, Sr., and his son, M. S. Daugherty, Jr., who operate a dairy near St. Francisville, said that the milk production from 55 cows increased from 110 to 130 gallons a day when they took the cows off native pastures and put them on a white clover pasture



last spring. After 25 days of grazing, the cows were taken out of the clover pasture in order to permit the clover to mature a seed crop. Under former use, soil loss ranged from 25 to 75 percent in most of the field, and in some parts more than 75 percent. The clover now is holding and improving the remaining topsoil.

Lee Ezell who operates a dairy on a 55-acre farm south of Franklinton spent \$182 for labor, seed, lime, and fertilizer to develop a 10-acre clover and Dallis grass pasture last fall. From March 6 to May 4—a total of 50 days—20 cows and 15 yearlings grazed on these 10 acres. His dairy records show that milk production increased 150 pounds a day and that the feed bill was cut \$5.10 a day through the use of the pasture. With milk worth \$3 a hundred pounds, the increased production was valued at \$4.50 a day. Thus the pasture had a gross cash value of \$9.60 an acre per day for 50 days, or a total of \$480, an average of \$48 an acre.

This land on the Ezell farm had been used to grow corn, soybeans, and peas, and had been yielding a gross annual income of \$35 an acre. Under that use, however, the 10 acres had lost between 25 and 75 percent of the topsoil. The thick carpet of clovers and grass has controlled erosion.

At Grand Cane in DeSoto Parish, M. C. Storey is manager of two farms on which the cotton yields were declining prior to 1936, when he began establishing a conservation-farming system with the help of Service technicians on the demonstration project. On one farm the average cotton-lint yield per acre was increased from 187 pounds to an average of 236 pounds an acre during the 5 years beginning in 1936. In 1940 the average was 334 pounds of lint an acre. On the other farm, the yield was increased from 173 pounds of lint cotton to 212 pounds an acre.

W. J. Young of Kentwood retired from cultivation to pasture two steep fields that were eroding. The fields were contour ridged to prevent washing and to conserve rainfall. The land then was fertilized, limed, and seeded to clovers. In 2 years the return from dairy cows had repaid the entire cost of establishing the pasture, and in addition had made a good return on the investment. Last spring when he placed dairy cows on this pasture, milk production increased more than 6 pounds a cow a day. Young is a cooperator with the Feliciana Soil Conservation District.

Over in Texas, farmers were also getting good results. Fred Knauf, who lives 2 miles north of Reisel, states:

Fifteen years ago 25 acres of my cultivated land was so badly damaged from sheet erosion that it would not grow corn at all and hardly enough cotton to pay the expense of making the crop. I terraced the land, and began applying all the barnyard manure available from my farm, plowing under a green-manure crop of oats, sudan, or hubam clover at least once every 3 years, and turning under all my cotton and corn stalks, and this land now averages a half bale of cotton and 30 bushels of corn per acre, and for the past 5 years erosion has been controlled.

During wartime it is necessary to get formerly abandoned land back into production if possible. At Guthrie, Okla., the Soil Conservation Service experiment station farm included 75 acres of abandoned land, which formerly had been cultivated. The farm also included 35 acres of scrubby oak pasture. First, the scrubby oak was removed, and then sprout growth was controlled by clipping with ordinary mowing machines. The grass reseeded itself and produced a good soil cover.

Seventeen acres of this cleared area produced 645 bales of native grass hay. The remainder was grazed by 20 steers that during 1 season gained an average of 276.5 pounds each. This amounted to 50.3 pounds of beef an acre from land which formerly had produced nothing.

#### IN THE LAKE STATES

Soil conservation increases farm income several hundred dollars a year \* \* \* boosts livestock income \* \* \* doubles the carrying capacity of pastures \* \* \* increases value of corn produced by \$12 or \$15 per acre \* \* \* boosts corn and oats yields 10 bushels or more an acre as a result of contouring \* \* \* saves 10 percent of tractor fuel through contour tillage which also required less power and labor \* \* \* enables farmers to produce more food for the boys in the armed forces, the home folks, and our allies without needless waste of soil \* \* \* is the only safe basis on which to produce the maximum of raw materials needed in the war effort.

These are just a few of the facts reported from the Lake States. The Service has collected all available information from farmers, soil conservation experiment stations, economic research workers, and members of the staff who had been observing the effects of the program on yields, livestock production, and farm income in these States.

For example, farm-record keepers in Illinois in 1941 obtained average corn-yield increases of up to 11 bushels an acre, or \$8.40 an acre, as a result of contouring. Similarly, farmers growing soybeans obtained increases ranging up to 6.2 bushels an acre as the result of contour tillage. Value of this increased yield was \$10.23 an acre.

Records of one Illinois farmer show that since adopting a complete conservation plan, his operating costs have averaged 14 percent less than those of his neighbors who farm parallel to boundary lines. This farmer operates a combine, tractor-drawn corn planter and cultivator, mechanical corn picker, mower, hay loader, and other equipment on terraced and contour strip-cropped fields.

Some interesting comparisons are reported from the Coon Valley and Fennimore Soil Conservation Demonstration Areas in Wisconsin.

Farm-record data show that farmers in these two areas are well on their way toward the achievement of war-production goals. The record-keeping farmers increased livestock production in 1941 considerably, and are making still further increases in 1942. Increases in butterfat and egg production in 1941 were larger on farms on which soil conservation programs have been established, whereas hog-production increases were larger on farms without such programs; due perhaps to the larger proportion of hay and the smaller proportion of corn and small grains grown.

Farmers who are participating in the soil conservation program in the Coon Valley area sold 19 percent more butterfat in 1941 than in 1940 as compared with a 12 percent increase in sales obtained by non-participating farmers. For the Fennimore area these figures were 23 percent and 5 percent, respectively, for the two groups. The sharper rise in butterfat sales on farms of cooperators was due to a greater increase in sales per cow, as well as to an increase in the number of cows milked. The number of cows on the program farms January 1, 1942, was 10 percent higher and on the nonprogram farms 5 percent higher than on the previous January 1.

The cooperating farmers not only showed a greater increase in egg sales in 1941 than the other group of farmers but they also had a higher percentage of hens and pullets on the farms January 1, 1942, than on

January 1, 1941. In the Coon Valley area, egg sales were increased by 14 percent on the program farms and by 4 percent on the non-program farms; by a 35 percent increase for cooperators and a 3 percent decrease for others in the Fennimore area.

#### IN THE NORTHERN GREAT PLAINS

Various difficulties confront those who make their living from the land in the northern Great Plains. Grasshoppers, long hauls to markets, blizzards, hailstorms, to name a few, are all to be contended with, but the most important problem in agricultural production is to save every possible drop of water the heavens grant. Walter Kurschinski, Van Hook, N. Dak., puts it succinctly:

It's just a matter of finding out what you have to work with and then using it to the best advantage. The conservation survey showed me that most of the land should be in grass, that there is some land on the farm where feed crops can be grown safely, and that a small part near the house is good for a truck garden. And I'm near enough to a market for garden stuff.

Kurschinski turned to his soil conservation district for help because of the severe erosion on his farm. Today he is producing much more food, and has faith in his land.

In Prairie County, Mont., nearly 100-percent current payment of taxes was recorded during the year and not a single land operator was on relief. But in 1935, less than one-third of the taxes on rural land was paid.

The experience of George Heald in the Spring Creek area in northeastern Wyoming is typical. He says:

I've learned many things in the 22 years since my family moved west. One is, that this is not a cash crop-hog country. Another thing—150 cows having a 90-percent calf crop with the calves averaging 400 pounds in the fall will produce 2 tons more beef than 250 cows with a 65-percent calf crop and the calves averaging 300 pounds. The Government helped us when we needed it, and now we're in a position to help in the war program by producing more beef and mutton and wool.

Undoubtedly my position would be much different today had it not been for the land-utilization project and the help of the Soil Conservation Service. Today we are useful to our country. We are using the land as it should be used, farming only to raise necessary feed crops, protecting the range, building feed reserves so that we can weather some tough years, no longer dependent on outside subsidies to remain on our places. We are real Americans. \* \* \* We want to stay that way.

Stubble-mulch tillage—that is, working the land with implements that leave the vegetative material on or near the surface—had a good test as a wind-erosion control measure last spring (1942) and came through in fine shape, according to Ross D. Davies of Brookings, senior soil conservationist in South Dakota. He said that more than 90,000 acres of land in soil conservation districts, SCS-CCC camp work areas, and demonstration projects were cultivated according to the stubble-mulch system, with subsurface tillage last year.

"I talked with a large number of farmers and all told me that their subsurface-tilled land did not blow this spring," Davies said. "I saw many fields treated in this way and none showed evidence of wind damage."



## IN THE SOUTHWEST

Throughout the Southwest an increase in irrigated pastures has brought about an increase in production of feed and dairy products. Proper application of irrigation water not only has improved crop production but also has saved water to bring other land into production. Rebuilding of diversion dams and ditch headings and clearing land of flood debris, as was done in several parts of this area during the year, was clearly a valuable wartime contribution. In the Hondo Valley, in the San Juan Valley, and in the Gila Valley prompt action last fall and winter made available thousands of acres for 1940 production, which otherwise would have lain idle during the current crop season.

In dry-land farming areas, pasture seeding was pointed out to farmers and ranchers as a part of the answer to inadequate spring and fall range. After the grass seed is harvested the land can be grazed. Seed is being produced for use now and in a post-war period when lands now in crops will have to be put back into grass.

Take the case of Floyd I. Davis of Dove Creek, Colo. Davis, in the fall of 1941, harvested and sold more than \$600 worth of crested wheatgrass seed from 160 acres of pasture, which he seeded in 1939. After selling the seed he was still able to pasture more than 60 head of livestock.

In many localities, crested wheatgrass alone, seeded on land which formerly brought poor grain production, is paying for itself many times over in terms of increased production of livestock and soil conservation at a time when the country most urgently needs both. In the Rio Grande Valley, sugar-beet seed growers were helped to plan farm operations which would produce the best seed more efficiently, and at the same time conserve soil and moisture.

Two examples—one from New Mexico and the other from Utah—reveal what soil conservation means to stockmen of the Southwest.

On the Espiritu Santo Grant of northwestern New Mexico, an Indian stockman named Sando from the ancient Jemez pueblo, last year grazed 573 ewes. The grant was purchased by the Government as submarginal land in 1935. Since that time proper management and soil conservation treatment have brought back grass and healed erosion to the point that it is now considered one of the best range areas of the Rio Puerco Valley.

Sando's 573 ewes last year produced a 106-percent lamb crop, with lambs weighing 73½ pounds, on the average, at selling time. The wool clip averaged 8.8 pounds per ewe.

Not many miles away, on other overgrazed, abused range lands of the Rio Puerco Valley, another stockman grazed 1,600 ewes last year. But his ewes brought no more than a 52-percent lamb crop with lambs weighing an average of 48 pounds at selling time. His wool clip averaged only 6 pounds per ewe.

Now for a comparison which shows the benefits of soil conservation on range land. Sando's herd of 573 ewes, on the properly managed range, brought 607 lambs weighing a total of 44,614 pounds at marketing time. On overgrazed range the other herd brought 832 lambs weighing only 39,936 pounds. Sando marketed 4,678 more pounds of lambs—better quality of lambs too, that commanded a higher price. And Sando, with one-third the number of ewes, obtained a wool clip more than half that of the larger herd.



In the Northern Utah Soil Conservation District, near Tremonton, the Christensen brothers are stockmen who raise cattle on a 10,000-acre ranch. Since 1940, they have cooperated with the soil conservation district and have put their ranch on a conservation-management basis.

The results, as the Christensen brothers report them, tell a terse but vivid story of improvement and increased production—better range lands, less erosion, a 5-percent increase in beef production last year, and a 15-percent increase in calf crop this past spring.

#### AID TO THE ARMED FORCES

Prior to December, the Soil Conservation Service had received many requests from the armed forces for assistance. Planting material had been furnished and Service technicians had visited many Army posts to advise on erosion-control problems. The War and Navy Departments had been notified that Service facilities were available to assist with flood-control and erosion problems at harbors, cantonments, forts, arsenals, and other points where assistance was needed. After the attack at Pearl Harbor various jobs were completed in record time.

J. R. Pollock and J. L. Vincenz of the Quartermaster Corps suggested detailing Soil Conservation Service technicians to Service Command (F) Offices in order to make an immediate survey of erosion conditions on Army units and develop erosion-control plans with estimates of cost. This was done very quickly, and the plans were used as a basis by the Quartermaster Corps for the allocation of funds to put erosion control in effect. Hundreds of Soil Conservation Service technicians were requested to help, and the wholehearted assistance received made it possible to complete the survey in approximately 3 weeks.

Erosion control and revegetation were planned for 185 Army cantonments, forts, air bases, and other Army units, and much engineering and agronomic work was applied by April 1, 1942, with plans for additional units rapidly being developed. Completed plans were submitted to Army officials at the posts for transmittal to Washington through Army channels. Considering that Army officials had to secure the necessary seeding and other equipment, fertilizer, seed, and other materials and labor after the funds were allocated, the job was done in a remarkably short time.

The problems encountered in the Army units included all those that are found in a regular farm-land conservation program. Excavation, grading, diversion and drainage ditches, levees, curbs and gutters, catch basins, retaining walls and structures of many kinds, land and seedbed preparation, lime and fertilizer application, seeding and sodding, application of topsoil, mulching, gully control, and planting of trees, shrubs, and vines were the principal operations and practices that were planned and applied.

Cantonments, airfields, hospitals, naval bases, or other necessary military establishments sprang up in every section of the Nation. Trees, shrubs, vines, and grass disappeared from thousands of acres during the clearing, grading, excavating, and leveling operations required in preparing sites for buildings, streets, railroads, landing fields, parade grounds, and rifle ranges. Consequently, wind and water erosion and drainage were soon major problems.

The Soil Conservation Service survey showed that, in many cases, normal rains left culverts choked and streets and parking areas covered with tons of silt. Pools of stagnant water were left under barracks and other buildings where they furnished breeding places for mosquitos. Roads, streets, railroads, utility stations, and other structures were endangered by sloughing of unprotected banks on cuts and fills. In other areas dust in the air caused and aggravated respiratory diseases; damaged airplane motors, typewriters, and other instruments and machinery; created hazardous flying conditions; and, at times, even grounded airplanes.

Throughout the United States SCS technicians attempted to remedy these problems. In Oklahoma, Arkansas, Texas, and Louisiana, alone, more than 100 technicians and the enrollees of 14 CCC camps gave assistance. Technicians prepared detailed plans and specifications for erosion control on 34 Army posts and gave limited assistance in the execution of these plans. CCC enrollees, WPA laborers, other civilian workers, and, in some cases, soldiers did the work. Erosion-control plans in these States were developed for 37 other military areas.

Armed forces were aided in many other ways. A sedimentation survey was made of Lake Corpus Christi, the water supply source of the Naval Air Training Station at Corpus Christi, Tex. A detailed flood-control survey was made of arroyos that regularly carry damaging waters to vital railroads and highways in Hudspeth County, Tex. Soldiers on maneuvers used recreational and camping facilities of several land-utilization projects. Bombing targets are situated on land-utilization projects near Barksdale Field, La.

Thousands of dollars were saved to the Army in getting erosion-control practices or measures on the land, and many other thousands of dollars were saved to the Army in maintenance and repair costs. For example, at an Army post in Louisiana, tentative plans called for the expenditure of approximately \$175,000 for the control of a large ditch that ran the full length of two sides of the post. Concrete was to be put in the bottom and on the side walls of the ditch. At the request of Army authorities, Service technicians made a comprehensive plan for controlling erosion on the entire post. Under the plan, sloping and sodding of the ditch would cost approximately \$25,000, or a saving of \$150,000.

Wind erosion was a major problem at Perrin Field, near Sherman, Tex. Airplanes had to be confined to the runways to prevent damage by blowing sand. While traffic thus was congested, two airplane accidents occurred. All airplanes had to be grounded on several occasions because of poor visibility brought on by dust and sand in the air. Service technicians planned erosion control for the field, using Bermuda grass, and work was begun early in March. Wind erosion has been controlled completely. Today airplanes may land on any part of the field safely. Sand and dust in the air no longer ground planes. Pilots are being trained more safely, rapidly and at less cost. The life of valuable machinery and delicate instruments is prolonged by protection from flying particles of gritty dust.

At the same field, water erosion also presented a grave problem in the building area where all topsoil had been removed during construction operations. After every heavy rain, ditches and drainage culverts were choked with subsoil washed from the exposed and highly

erodible ditchbanks and areas adjacent to buildings. In level or gently sloping areas near the buildings, a 3-inch cover of topsoil was placed directly on Bermuda grass roots, sprig-sodded in March, and then the land was fertilized and watered.

At Fort Sill, Okla., the erosion problem ranged from minor sheet erosion to very severe gullyng. Parade grounds were being damaged by minor gullyng, severe sheet erosion, and considerable wind erosion. Severe gullyng was occurring where water concentrated on each end of rifle-range abutments, in borrow pits along new roads, and in borrow pits around new buildings. Construction scars, where earth had been obtained for construction work, were sloughing or caving.

Following an erosion-control plan worked out by Service technicians at the request of the Army, 300 acres of parade ground and construction scars were fertilized with compost, made into a seedbed, and planted to Bermuda grass. Five acres of gullies and borrow pits were sodded. Twelve hundred and fifty-five acres of formerly cultivated land were seeded to native blue grama to control sheet erosion. Weeds on 900 acres were mowed twice to eliminate light and moisture competition with the grass. Two CCC camps furnished most of the labor.

This work at Fort Sill saved the Army at least \$250,000 on maintenance and operations cost, because, with erosion uncontrolled, masonry structures around stables were beginning to crumble, roadbeds could not be maintained, loading docks around warehouses were endangered by gullyng, and dust was damaging equipment. Without control some of the gullies would have undermined building foundations completely.

Fort Sill and Perrin Field are typical examples of the way the Service marshalled experienced personnel and other resources to help the armed forces solve a serious problem. Methods that had proved practical on thousands of farms were adapted to the emergency task of immediately holding soil and controlling run-off. Where abnormal conditions or special problems were created by construction, technicians devised methods (as the cotton-bur mulching at Perrin Field) that stopped washing or blowing under adverse conditions. Grasses or other plant materials were used wherever they could do the job.

Arroyo floods in Hudspeth County, Tex., have created a critical condition because they have damaged, and may again damage, vital transportation arteries. In 1941, for example, traffic on the Southern Pacific Railroad was delayed 72 hours on 2 separate occasions by washouts of bridges crossing these arroyos. Such a delay could jeopardize the defense of the United States, because as many as 26 troop trains have been transported over this railroad within 24 hours. In addition, an average of 36 other trains use the road daily. U. S. Highway No. 80, a transcontinental artery, crosses the same arroyos. Detailed flood-control surveys just completed resulted in recommendations that if put into effect will minimize, and perhaps prevent, damage to these necessary transportation arteries. Landowners in the irrigated Rio Grande River valley in the same vicinity would benefit from this work, too.

All land in the Cookson Hills Land-Utilization project, near Muskogee, Okla., has been placed at the disposal of the Army and is now the site of Camp Gruber. More than 28,000 acres had been purchased



under the land-utilization program when the project was taken over by the Army (table 3). The site is almost ideal for training soldiers, and even includes a developed recreational area.

TABLE 3.—*Acreage of submarginal land transferred to other agencies and the agencies involved, by States, during the fiscal year ending June 30, 1942*<sup>1</sup>

State	Acres <sup>2</sup>	Transferred to—	State	Acres <sup>2</sup>	Transferred to—
Alabama.....	(32, 251)	War Department.	New Mexico.....	<sup>3</sup> 86, 249	Office of Indian Affairs.
Arkansas.....	1, 495	Do.	Oklahoma.....	27, 038	War Department.
Illinois.....	9, 877	Do.	Oregon.....	1, 980	Oregon Park Commission.
Indiana.....	(35, 586)	Navy Department.	South Carolina.....	(251)	War Department.
Louisiana.....	2, 400	War Department.	South Dakota.....	8, 885	Do.
Maine.....	1, 508	Maine State Park Commission.		(68, 088)	
Mississippi.....	2, 560	War Department.	Total.....	141, 992	

<sup>1</sup> For the 2,726,742 acres previously transferred to other agencies, see table 5, page 18, of the 1941 report.

<sup>2</sup> Figures in parentheses represent acreage in agreements with State agencies (included in 1941 report) which were cancelled by mutual understanding to make the lands available for national defense purposes.

<sup>3</sup> This transfer involved an exchange of lands in which the Soil Conservation Service acquired 113,141 acres.

In one extreme case, \$890,000 had been requested to control bad erosion and drainage problems at an Army post. Service technicians developed a plan, which was accepted by the Army, cutting costs to one-third the original estimate. Innumerable other instances of cost reduction, largely by the use of more vegetation and less construction materials, or the substitution of more economical measures of control, could be given.

There are other angles to our cooperation with the Army. Many CCC camps assigned to the SCS have been transferred to Army posts to install erosion-control measures. Our nurseries have supplied the Army with approximately 20,000,000 trees and shrubs and considerable seed of plants not ordinarily available commercially. A section on erosion control was prepared for the Repair and Utilities Handbook, which is available at all Army posts. Other publications dealing with erosion-control revegetation and highway stabilization have been supplied in quantity.

While the entire Service has assisted with this work, Major R. H. Morrish and the other men on detail with the Army Engineers deserve commendation for carrying on with the job. They have made the arrangements and followed through with the innumerable details that are so necessary to do a big job in a hurry. The others, in addition to Major Morrish, who deserve special mention are C. E. Monfort, Spartanburg, S. C., now Captain Monfort, with headquarters at Atlanta, Ga.; John H. Cheek, Fort Worth, Tex., now at San Antonio; Arthur Middleton, Spokane, Wash., now at Salt Lake City, Utah; Walter Kell, Lincoln, Nebr., now at Omaha; Sid Parish, Lima, Ohio, now at Columbus; and E. C. Murdoch, Upper Darby, Pa., now at Baltimore, Md. Two of these men have been commissioned. The others are being transferred to Army pay rolls effective July 1, 1942, for the duration.

The Service, by handling erosion and revegetation problems, is not only saving soil but also helping the Army officials to devote more time to training the fighters who will protect our soil.



## WORK IN THE FIELD

### SURVEYING AND MAPPING

Detailed soil conservation surveys, to furnish an inventory of physical land conditions, are part of the service rendered to soil conservation districts. These surveys are being used to classify land capability as a physical basis for the development of farm-conservation plans.

Detailed surveys were made during the year on 35,652,300 acres, of which 31,778,000 acres are in legally constituted soil conservation districts. This brings the total area to 134,577,000 acres, of which 77,392,500 acres are in complete surveys, chiefly soil conservation districts or county areas.

A method was worked out for making reconnaissance surveys at a rate of from 10 to 30 square miles per man-day, mapping land factors with sufficient accuracy to classify land capability for use in general planning, but not in farm-conservation planning. Such reconnaissance surveys were made in all of Kansas and Nebraska, and in about 25 counties or soil conservation districts in other States.

The Cartographic Division performed a large amount of War work for the Corps of Engineers, Army Map Service, Office of the Quartermaster General, Army Air Forces, and the Engineer Board of the War Department; the Bureau of Aeronautics, Bureau of Yards and Docks, and the Navy Department; the Coast and Geodetic Survey of the Department of Commerce; and other agencies engaged in War activities. This included such work as making aerial surveys, compiling and reproducing topographic and planimetric maps, compiling aerial photographic mosaics, furnishing aerial photographs, preparing control data, and making photographic and lithographic reproductions.

During the year aerial surveys were completed of 35 areas in 16 States covering 37,500,000 acres. Contracts were awarded for aerial photography for 22 areas covering 25,500,000 acres, of which the work on 6,000,000 was completed. A total of 21,000,000 remained under contract at the end of the year. More than 350,000 aerial photographs and photo-index sheets were shipped to field offices of the Service, approximately the same number as last year. Including the work performed for War agencies, the total production of all cartographic activities was increased over that of last year. Ground control was established for use as a basis for the compilation of planimetric maps at a scale of 1:15,840, on 2,284,000 acres.

Planimetric base maps at a scale of 1:15,840 were compiled for 3,019,000 acres. Detailed physical-survey data covering an area of 939,000 acres were projected from aerial photographs to the planimetric maps. Land-capability data were compiled on 421,000 acres. Land-capability maps at a scale of 1:15,840 covering 722,000 acres were reproduced by photo-lithography on 130 sheets with the culture in black, drainage in blue, land use in grey, physical-survey data in brown, and land capability in colors.

Several additional maps were compiled to show various data. Examples of this type of map are the 24 northeastern Nevada cooperative land use study maps at a scale of 1 inch equals 4 miles and Central Great Plains Experimental watershed and the North Appalachian Experimental watershed maps at a scale of 1 inch equals 400 feet.

The results of 44 surveys, having an aggregate area of 4,928,000 acres, were tabulated by the weighing method to show the extent of the various soil, erosion, slope, and land-use delineations. Four survey reports were submitted for publication.

### PROJECT PLANNING

Planning is undertaken for the areas in which the Service is assisting locally established groups, such as soil-conservation districts, or where the Service is working in cooperation with State, local, and other Federal agencies (table 4). Such planning involves consideration of physical and economic conditions. In the process of planning the need is recognized for such adjustments as are called to the attention of the proper local, State, and Federal agencies for their consideration and appropriate action. Particular emphasis is given to needed adjustments in land-utilization areas where the purchase and retirement of submarginal farm land under the Bankhead-Jones Farm Tenant Act involves the relocation of families and the making of payments to counties based on 25 percent of revenue in lieu of taxes. Following the analysis of land-use and soil-erosion information, problems are considered in regard to different types of operating units (farms or ranches) (tables 5, 6, 7, and 8).

TABLE 4.—General plans for work-unit areas involved in programs of the Service other than those shown in table 2

Region and State	Other plans							
	Land utilization		Drainage		Water facilities		Farm forestry	
					Individual type	Group type		
	Number	Acres	Number	Acres	Number	Number	Number	Acres
Region 1:								
Connecticut.....	1	11,707					37	181
Delaware.....	1	5,072	39	177,830				
Maine.....	2	24,761					7	1,279
Maryland.....	2	45,278	93	334,653			22	3,541
Massachusetts.....								
New Hampshire.....								
New Jersey.....							14	603
New York.....	5	93,326						
Pennsylvania.....	2	40,581					27	1,123
Rhode Island.....	1	12,550					38	8,050
Vermont.....								
West Virginia.....	2	15,542					81	9,053
Total.....	16	248,817	132	512,483			226	23,830
Region 2:								
Alabama.....	3	129,784					18	4,508
Florida.....	4	588,146					27	7,275
Georgia.....	7	247,553					19	4,534
Kentucky.....	3	79,021	101	313,913				
Mississippi.....	3	135,853					65	8,051
North Carolina.....	3	110,763						
South Carolina.....	3	148,268					52	12,232
Tennessee.....	5	76,250					27	879
Virginia.....	3	43,252					43	8,629
Puerto Rico.....								
Virgin Islands.....								
Total.....	34	1,558,890	101	313,913			251	46,108

TABLE 4.—General plans for work-unit areas involved in programs of the Service other than those shown in table 2—Continued

Region and State	Other plans							
	Land utilization		Drainage		Water facilities		Farm forestry	
					Individual type	Group type		
	Number	Acres	Number	Acres	Number	Number	Number	Acres
Region 3:								
Illinois.....	2	41,356	708	1,895,846			82	3,948
Indiana.....	2	58,410	934	3,287,033			19	3,673
Iowa.....	1	1,901	482	1,149,132			39	7,889
Michigan.....	5	89,822	40	199,473			51	9,610
Minnesota.....	3	102,857					60	8,706
Missouri.....	3	17,925	692	1,235,281			53	2,123
Ohio.....	3	38,374	887	2,397,372				
Wisconsin.....	8	205,053						
Total.....	27	555,698	3,743	10,164,137			304	35,949
Region 4:								
Arkansas.....	8	209,509						
Louisiana.....	2	31,157	305	2,410,886			24	2,960
Oklahoma.....	6	132,564			517	2	33	2,446
Texas.....	10	128,237			1,635	3	411	1,549
Total.....	26	501,467	305	2,410,886	2,152	5	468	6,955
Region 5:								
Kansas.....	1	102,044			358	0	22	5,730
Montana.....	7	1,964,793			54	4	34	6,543
Nebraska.....	1	133,580			182	1	18	248
North Dakota.....	3	1,068,002			85	0	30	11,942
South Dakota.....	5	860,889			189	2	53	9,737
Wyoming.....	1	538,059			260	9		
Total.....	18	4,667,367			1,128	16	157	34,200
Region 6:								
Arizona.....	1	47,971			37	2		
Colorado.....	5	667,273			116	6	69	157
New Mexico.....	10	921,406			100	24		
Utah.....	2	69,433			133	23		
Total.....	18	1,706,083			386	55	69	157
Region 7:								
California.....	2	26,913			133	1	33	10,432
Idaho.....	1	130,644			88	24	21	5,446
Nevada.....	1	3,385			24	1		
Oregon.....	3	285,589	1	154	39	5	22	2,806
Washington.....	1	348,403			72	1		
Alaska.....								
Hawaii.....								
Total.....	8	794,934	1	154	356	32	76	18,684
United States total.....	147	10,033,256	4,282	13,401,573	4,022	108	1,551	165,883

TABLE 5.—*Agricultural land-utilization program of the Soil Conservation Service under Title III of the Bankhead-Jones Farm Tenant Act: Status of administration and management of lands acquired as of June 30, 1942*<sup>1</sup>

State	Total acquired <sup>2</sup>	Transferred to other Federal agencies for management or cus- todianship	Under SCS		
			Direct manage- ment	Managed through local agencies <sup>3</sup>	Custodian- ship <sup>4</sup>
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Alabama.....	129,784	119,034	10,750		
Arizona.....	47,971		47,971		
Arkansas.....	209,509	124,688	84,821		
California.....	26,913		26,913		
Colorado.....	667,273	11,614	469,953	185,706	
Connecticut.....	11,707	11,707			
Delaware.....	5,072		5,072		
Florida.....	588,146	285,789	117,549		184,808
Georgia.....	247,553	84,736	110,832		51,985
Idaho.....	130,644		130,644		
Illinois.....	41,356	19,692	21,664		
Indiana.....	58,410	58,410			
Iowa.....	1,901				1,901
Kansas.....	102,044		102,044		
Kentucky.....	79,021	60,817	17,204		1,000
Louisiana.....	31,157	3,000	28,157		
Maine.....	24,761	20,253	4,508		
Maryland.....	45,278	43,478			1,800
Michigan.....	89,822	82,340	7,482		
Minnesota.....	102,857	101,067	1,790		
Mississippi.....	135,853	2,560	124,902		8,391
Missouri.....	17,925	4,987	12,938		
Montana.....	1,964,793	28,558	184,933	1,751,302	
Nebraska.....	133,580		8,223	125,357	
Nevada.....	3,385		3,385		
New Mexico.....	921,406	265,256	656,150		
New York.....	93,326	76,416	13,037		3,873
North Carolina.....	110,763	96,702	14,061		
North Dakota.....	1,068,002		228,586	838,004	1,412
Ohio.....	38,374	38,374			
Oklahoma.....	132,564	28,038	85,405		19,121
Oregon.....	285,589	74,753	207,666		3,170
Pennsylvania.....	40,581	6,868	33,713		
Rhode Island.....	12,550	12,550			
South Carolina.....	148,268	91,359			56,909
South Dakota.....	860,889	9,919	324,029	522,861	4,080
Tennessee.....	76,250	75,032	1,218		
Texas.....	128,237		128,237		
Utah.....	69,433	27,183	42,250		
Virginia.....	43,252	43,252			
Washington.....	348,403	348,403			
West Virginia.....	15,542	7,594	7,948		
Wisconsin.....	205,053	205,053			
Wyoming.....	538,059		4,609	533,450	
Total.....	10,033,256	2,469,482	3,268,644	3,956,680	338,450

<sup>1</sup> This summary does not include 734,999 acres in migratory waterfowl land-utilization projects transferred to the Fish and Wildlife Service, 394,968 acres in recreation land-utilization projects transferred to the National Park Service, 896,768 acres in 27 Indian land-utilization projects transferred to the Office of Indian Affairs, or 3,987 acres in one of the last-mentioned projects transferred to the Forest Service.

<sup>2</sup> Represents acreage acquired by transfer and purchase, including lands for which options to purchase have been accepted on behalf of the United States.

<sup>3</sup> Soil conservation districts, grazing districts, and grazing associations.

<sup>4</sup> Represent acreages transferred to State agencies for which the Soil Conservation Service maintains a custodial responsibility. Transfers of lands to State agencies are consummated by agreement whereby the United States retains title to the lands and exercises a custodial responsibility to assure appropriate management and protection.



TABLE 6.—Summary of use and income from lands under SCS management, by region and State, for calendar year ending Dec. 31, 1941

[illegible]

TABLE 6.—Summary of use and income from lands under SCS management, by region and State, for calendar year ending Dec. 31, 1941—Con.

Region and State	Grazing permits		Cropping permits		Hay- ing per- mits	Forest- prod- ucts per- mits	Other per- mits	Recreation facilities used by persons	Actual deposits in treasury			Deposits in treasury derived from—				
	Num- ber	Acres	Num- ber	Acres					Use of land and facil- ities	Minerals leases and sales of improve- ments	Total	Graz- ing	Crop- ping	Hay- ing	Forest- prod- ucts removal	Others
Region 5:																
Kansas.....	1,471	374,537	17	1,051	11		1	32,850	Dollars 248.40 41,511.51	Dollars 16.00 21,216.55	Dollars 264.40 62,728.06	63	1	1		100
Montana.....	161	35,756				9	204		6,938.19	896.20	7,834.39	87				35
Nebraska.....	738	205,018	62	3,034	160	106	106	2,045	28,426.48	8,601.61	37,028.09	60	6	6		12
North Dakota.....	505	190,242	21	1,307	72	5	48	700	39,321.48	8,921.72	48,243.20	76	2	3		27
South Dakota.....	251	144,589	2	81	13		32	2,665	24,147.94	708.30	24,856.24	97				19
Wyoming.....																3
Total.....	3,036	950,102	102	5,473	265	136	393	38,231	140,594.00	40,360.38	180,954.38	71	2	3		24
Region 6:																
Arizona.....	50	2,371					2		231.10		231.10	100				
Colorado.....	252	65,476	12	2,823	6		46		14,776.51	11,642.54	26,419.05	55				45
New Mexico.....	496	67,049	5	235		1	52		9,744.41	100.00	9,844.41	94	1		1	4
Utah.....	37	2,781					2		580.30		580.30	100				
Total.....	835	137,677	17	3,058	7	632	102		25,332.32	11,742.54	37,074.86	67				33
Region 7:																
California.....	13	5,913							1,537.27		1,537.27	100				1
Idaho.....	318	19,635							2,859.93		2,859.93	99				63
Nevada.....	2	632					3		212.00		212.00	37				7
Oregon.....	214	17,557	3	520	1		49		5,176.95	216.50	5,393.45	93				5
Total.....	547	43,757	3	520	1		52		9,786.15	216.50	10,002.65	95				
U. S. total.....	5,572	1,224,281	496	25,938	403	1,108	1,529	1,378,106	224,115.45	60,319.37	289,434.85	63.9	3.2	1.9	.3	24.4

TABLE 7.—*Submarginal land acquired by the Soil Conservation Service and antecedent agencies, by States, by fiscal years, 1935 to 1942, inclusive*<sup>1</sup>

State	1935	1936	1937	1938	1939	1940	1941	1942	Total
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Alabama.....			103,529	10,818	9,195	6,768	1,782	3	132,095
Arizona.....						1,321	26,551	13,027	40,899
Arkansas.....		45,796	107,509	72,473	22,472	14,423	10,853	9,608	283,134
California.....			3,982				8,297	48	12,327
Colorado.....		27,491	172,390	33,656	25,824	267,027	109,420	22,489	658,297
Connecticut.....		441	4,883	5,005	52	1,191	175		11,747
Delaware.....		1,133	3,072	81	128	178	134	135	4,861
Florida.....		3,173	160,286	258,257	125,163	66,944	7,481	2,348	623,652
Georgia.....	7,556	41,292	82,042	39,769	24,290	9,548	29,234	20,200	253,931
Idaho.....		6,094	50,474	73,002	5,564	2,508	1,407	153	139,202
Illinois.....		4,246	3,035	8,033	11,583	13,292	2,248	100	42,537
Indiana.....	476	3,371	32,843	12,153	4,432	3,890	3,995	2,542	63,702
Iowa.....		210	945	200	546				1,901
Kansas.....			25,283	26,921	4,798	34,498	6,384	4,000	101,884
Kentucky.....		165	61,707	4,478	696	2,759	1,886	90	71,781
Louisiana.....			8,686	179,164	11,758	854	1,410	197	202,069
Maine.....			7,366	8,371	1,639	2,597	1,831	2,099	23,903
Maryland.....		175	29,441	10,868	1,003	3,309	500	124	45,420
Michigan.....	364	6,542	26,389	43,689	12,654	7,847	560	825	98,876
Minnesota.....		16,380	114,019	51,229	11,386	9,143	388	574	203,119
Mississippi.....		12,366	58,026	22,656	13,939	7,969	12,152	8,097	135,205
Missouri.....	640	8,244	14,961	2,478	331	5,184	4,733	3,244	39,815
Montana.....	3,336	326,605	762,014	517,806	74,524	233,819	124,919	50,871	2,093,894
Nebraska.....	1,560	43,930	57,919	52,362	8,693	15,315	13,612	5,389	198,780
Nevada.....							3,135	250	3,385
New Hampshire.....			45						45
New Mexico.....	213,062	354,266	363,568	84,267	23,820	163,846	116,209	17,361	1,336,399
New York.....		399	35,174	31,369	4,523	11,769	9,548	210	92,983
North Carolina.....	49,925	8,281	30,773	26,959	14,399	14,273	8,168	7,413	160,191
North Dakota.....	21,116	126,951	297,094	362,658	51,605	168,779	92,637	5,604	1,127,344
Ohio.....			20,822	7,206	7,034	2,029	1,105	168	38,864
Oklahoma.....		3,246	29,887	15,444	12,202	18,607	34,718	20,376	134,580
Oregon.....	64,717		75,638	75,433	3,076	35,493	56,705	15,311	326,374
Pennsylvania.....		5,294	10,357	17,884	5,987	7,438	2,212		49,172
Rhode Island.....			3,426	7,575	135	1,469			12,605
South Carolina.....		10,791	79,449	32,700	17,840	11,400	2,188	292	154,660
South Dakota.....	4,675	272,067	345,638	123,790	22,793	123,191	50,669	24,035	966,858
Tennessee.....		17,537	48,370	7,025	2,016	2,537	4,410	2,186	84,081
Texas.....			5,989	6,957	15,461	52,695	36,249	7,833	125,184
Utah.....			35,371	12,002	3,723	6,422	9,027	2,565	69,110
Virginia.....		3,538	43,894	6,806	694	1,460	27		56,419
Washington.....			100,357	134,411	6,036	2,419	966	5,797	249,986
West Virginia.....				5,361	687	1,621	6,174	1,629	15,472
Wisconsin.....	120	13,814	73,561	56,366	76,436	12,198	3,569	5,019	241,083
Wyoming.....		10,529	245,058	16,991	12,513	118,657	14,367	5,113	423,258
Total.....	367,547	1,374,367	3,736,302	2,464,673	651,650	1,466,678	822,042	267,325	11,150,584

<sup>1</sup> In many of the data presented from time to time regarding the purchase of submarginal land, the measure used to indicate the amount of land purchased is the acreage under legally "accepted options." The figures in this table for all years except 1935 and 1936 represent the acreage for which "checks delivered to vendors" had been consummated. Data for the acquisition step of "checks delivered to vendors" were not available for the years 1935 and 1936, and therefore the data for those years represent the closest comparable activity, that of "final opinion received," which is really the last requirement in completing the acquisition of a tract of land.

TABLE 8.—*Progress in the payment for submarginal land purchased by fiscal years, 1935 to 1942, inclusive*<sup>1</sup>

Item	1935	1936	1937	1938	1939	1940	1941	1942
(A) Accumulative acreage under accepted options.....	3,374,251	8,639,129	8,875,128	8,966,310	10,543,896	11,110,560	11,202,012	11,313,882
(B) Accumulative acreage paid for.....	367,547	1,741,914	5,478,216	7,942,889	8,594,539	10,061,217	10,883,259	11,150,584
Percent of land paid for (B+A).....	10.89	20.16	61.73	88.59	81.51	90.56	97.15	98.56

<sup>1</sup> These figures include the acreage for which payment had been made in the recreational demonstration projects prior to the transfer of those projects to the National Park Service, by Executive order of Nov. 14, 1936.

Work along this line includes assistance to the boards of supervisors of soil conservation districts, when requested, in the preparation of their programs and work plans and in subsequent improvements in them. During the year the Service assisted 211 districts in the preparation of their programs and work plans and an additional 50 districts in making substantial improvements in either their program or their work plan.

### FARM PLANNING

The purpose of a farm conservation plan is to assist the farmer in systematically incorporating the essential soil- and moisture-conservation measures, tillage practices, grazing practices, and sound land use treatments into his farming system to control erosion permanently and maintain the productivity of the land.

The initial step in helping farmers and ranchers prepare their soil- and moisture-conservation plans is to bring about a thorough understanding of the conservation problems and the combination of erosion-control measures and land use changes needed. This can be done most effectively by discussing the principles of conservation with small groups of farmers drawn from a small area, such as a neighborhood. After the farmers have requested assistance in planning their farms they usually make the arrangements for the discussions which are held on a farm or in a farm home designated by them. Where the group selects leaders for various jobs it usually falls to one of the leaders to make the arrangements for the planning discussions, while other farmers may be given responsibilities for arranging for equipment and planting materials needed in applying the conservation plans.

The group activities do not stop with planning but are also necessary to put the plans into effect more quickly. In this way the Service has been able to reduce greatly the amount of time required in helping farmers and ranchers prepare and carry out their conservation plans. Tables 9 and 10 reflect the status of the conservation program in soil conservation districts which the Service is assisting and in Service work areas outside of districts as of December 31, 1941, insofar as specific, individual conservation plans for farms, ranches, and other units of land are concerned. The spread of soil conservation work of a similar type is far reaching, but does not lend itself to definite measurement by records. The contrast in land uses before and after planning is shown in table 11.

TABLE 9.—*Status of the major soil conservation work included in programs the Service had directed or in which it was cooperating as of Dec. 31, 1941*

Practices	All work units except districts		Districts		Total	
	Planned <sup>1</sup>	Completed	Planned	Completed	Planned	Completed
Contour cultivation.....Acres..	5, 978, 004	5, 182, 345	3, 148, 382	1, 268, 705	9, 126, 386	6, 451, 050
Contour furrows.....do.....	1, 454, 961	1, 139, 973	1, 128, 502	300, 529	2, 583, 463	1, 440, 502
Grass planting.....do.....	2, 100, 645	1, 591, 822	1, 568, 348	405, 961	3, 668, 993	1, 997, 783
Woody planting.....do.....	487, 810	468, 999	186, 766	80, 926	674, 576	549, 925
Reservoirs and ponds.....Number	12, 988	11, 545	6, 726	2, 637	19, 714	14, 182
Strip cropping.....Acres.....	2, 447, 093	2, 094, 616	1, 894, 079	620, 200	4, 341, 172	2, 714, 816
Terracing.....do.....	2, 726, 727	2, 221, 328	3, 030, 082	767, 108	5, 756, 809	2, 988, 436
Combined treatment.....do.....	37, 353, 730	27, 793, 025	21, 838, 913	7, 930, 638	59, 192, 643	35, 693, 663

<sup>1</sup> Decreases in planned figures for certain practices from those shown in the 1941 report are caused by deletion of planned figures for agreements canceled and resigned as farmer-district agreements.



TABLE 10.—*Progress in the application of major soil conservation practices effected in programs which the Service had directed and in which it was cooperating, and percentage accomplished in districts, for the years 1935 to 1940, inclusive, 1941, and total to Dec. 31, 1941*

Practices	Accomplished 1935 to 1940 inclusive <sup>1</sup>	Accomplished in districts	Accomplished calendar year 1941	Accomplished in districts	Total accomplished to Dec. 31, 1941	Accomplished in districts
	<i>Acres</i>	<i>Percent</i>	<i>Acres</i>	<i>Percent</i>	<i>Acres</i>	<i>Percent</i>
Contour cultivation.....	5,261,794	12.2	1,189,256	58.0	6,451,050	19.7
Strip cropping.....	2,160,552	12.8	554,264	60.9	2,714,816	22.8
Terracing.....	2,410,852	15.0	577,581	68.3	2,988,436	25.7
Contour furrows.....	1,169,329	12.7	271,173	46.7	1,440,502	19.9
Woody planting.....	483,562	7.1	66,363	73.8	549,925	14.7
Grass planting.....	1,624,502	12.2	373,281	63.0	1,997,783	20.3
Combined treatment.....	27,167,062	10.5	8,526,601	56.0	35,693,663	22.1
Reservoirs and ponds.....	<i>Number</i> 11,138	10.1	<i>Number</i> 3,044	52.7	<i>Number</i> 14,182	18.3

<sup>1</sup> Acreages completed as of Dec. 31, 1940, vary somewhat from those shown in the 1941 Report because of adjustments made in the figures since that report was prepared.

TABLE 11.—*Land uses before and after planning for all farms and ranches for which detailed land use plans had been developed by Soil Conservation Service technicians to June 30, 1942*

Crop or type of use	Areas before planning	Area devoted to each use after planning <sup>1</sup>			
		Cultivated	Permanent hay	Orchard and vineyard	Pasture and range
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Cultivated.....	18,923,134	(16,050,388)	923,217	23,380	1,702,843
Permanent hay.....	849,521	74,654	(720,906)	663	46,300
Orchard and vineyard.....	292,135	7,533	2,407	(209,754)	64,832
Pasture and range.....	33,932,064	156,540	90,744	15,970	(33,326,479)
Forest range and wooded pasture.....	4,534,454	23,437	8,886	1,084	688,891
Woodland.....	5,487,221	75,961	18,855	2,953	354,403
Wildlife.....	87,563	528	268	88	1,665
Idle.....	<sup>2</sup> 1,310,473	285,263	225,557	5,979	550,948
Miscellaneous.....	1,492,044	43,580	20,113	1,995	81,834
Total acreages.....	66,908,609	16,717,884	2,010,953	261,866	36,818,195
Net changes.....		-2,205,250	+1,161,432	-30,269	+2,886,131

  

Crop or type of use	Area devoted to each use after planning <sup>1</sup> —Con.			
	Forest range	Woodland	Wildlife	Miscellaneous
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Cultivated.....	14,649	178,563	14,429	15,665
Permanent hay.....	125	5,911	272	690
Orchard and vineyard.....	536	6,574	161	338
Pasture and range.....	40,678	249,060	31,247	21,346
Forest range and wooded pasture.....	(3,241,266)	563,867	5,955	1,068
Woodland.....	74,725	(4,944,605)	11,852	3,867
Wildlife.....	75	20,664	(63,918)	357
Idle.....	9,286	158,032	43,130	32,278
Miscellaneous.....	2,133	107,095	14,725	(1,220,569)
Total acreages.....	3,383,473	6,234,371	185,689	1,296,178
Net changes.....	-1,150,981	+747,150	+98,126	-195,866

<sup>1</sup> The acreage figures shown in parentheses represent the amount of the "before planning" acreage to remain in its original use.

<sup>2</sup> No land remains "idle" after planning.

## CONSERVING RANGE LANDS

One of the most important parts of the Food-for-Freedom program is the production of meat, wool, and leather. In carrying out this part of the program, it is vitally important that we not only give our range lands the care necessary to produce the livestock required during the war period, but that we also avoid many of the serious effects of a similar expansion at the time of the first World War.

The main emphasis of the conservation program of the Service during the last year has been in supplying directly to farmers and ranchers assistance which will enable them to meet the livestock marketing goals established, while at the same time protecting and improving their range lands.

Service technicians, in dealing with ranchers, have emphasized the practices that can and should be followed for best use of the range without damaging it—and at the same time maintaining the most effective livestock production. Orderly production and marketing of livestock to meet constant demands for slaughter animals have been stressed with emphasis on increase of production by more pounds of meat, wool, and mohair on each animal rather than a greater number of animals. In this connection range-trained personnel throughout the Service at field locations have assisted State and County War Boards to determine production goals for livestock products, and for critical areas established by the State War Boards special programs have been developed. Most ranchers have now come to understand that there is no conflict between the objectives of range conservation and wartime production.

Typical of the response to ranch work of the Service is the progress made in the Highland Soil Conservation District of the Big Bend section of west Texas. Less than a year ago this district had 3 or 4 extension demonstrations. Today 9 ranchers have signed agreements with the district supervisors to put conservation and good range-management practices on 215,000 acres. Four of these agreements were signed during the last 60 days of the fiscal year. Thirteen other ranchers, who operate more than 356,000 acres, have applied to the supervisors for assistance. A year ago in the North Concho Soil Conservation District in central west Texas not one rancher had signed an agreement to carry out conservation measures. On June 30, 1942, more than 30 ranchers had completed district agreements covering approximately 200,000 acres. Five other ranchers in the district have asked for help in protecting and improving 85,300 acres.

## CONSERVATION NURSERIES

During the last year the Soil Conservation Service through its Division of Nurseries, furnished approximately 120,000,000 plants and 1,000,000 pounds of grass and legume seed for erosion-control plantings. Operations of the Division have been carried out through 30 field nursery units located in 29 States.

Nursery stock included tree and shrub species used for gully plantings, for retirement of badly eroded land no longer suitable for cultivation, establishment of shelterbelts, permanent vegetative cover for sandblow areas, and field borders and protective plantings for wildlife. Much of this stock consisted of kudzu plants, grass

stolons, and grass clones that were used primarily as cover on gullies and eroding abandoned hillsides in the southeastern United States, and for sand-dune stabilization along the seacoast in New England and the Northwest. Nearly 10,000,000 plants were supplied for erosion-control plantings on War Department cantonments and airfields.

Progress has been made in the selection and use of improved forage species of grasses for conservation plantings. Seed produced in this manner is available for further conservation plantings on cooperators' farms or may be sold commercially, thus providing a source of improved, adapted seed and at the same time providing the seed producer with material cash income.

Cooperative activities with State experiment stations and other agencies throughout the year has resulted in rapid progress in plant-testing work and in many instances has provided improved materials for Service operations.

### FARM FORESTS

Lumber and other wood products are badly needed to help in the war. Demand has stimulated timber cutting, some of which is destructive, on farms in the South, the Northeast, and the Lake States. Some farmers have not learned how to harvest woodland products as a farm crop by cutting the mature timber and saving young timber for further growth.

The Soil Conservation Service has combated this destructive cutting and encouraged farmers to improve their woodland by selective cutting. A national forestry handbook has been prepared and distributed for use by Soil Conservation Service personnel. Regional handbooks have also been prepared. The Soil Conservation Service has trained farm planners in the essentials of farm-woods management.

The intensive farm-forestry projects are of growing importance as testing grounds and practical demonstrations of better farm-woods management. Of the 52 intensive projects in operation at the end of the year, 42 were under direction of the Soil Conservation Service. It is significant that, in State after State, despite the pressure of higher demand and prices for forest products, farm-forestry cooperators are holding to their plans for sustained-yield management. The cumulative effect soon will begin to show in improved forest growing stock and forest income.

Despite decreasing public assistance in tree planting, the reforestation of eroding or erodible farm lands continues in good volume. Weather conditions were favorable for survival and growth of forest plantings over much of the country during the last year, and examinations indicate that approximately 75 percent of the trees planted will survive. Improved methods are also playing a part.

At the close of the year, the Prairie States Forestry project, formerly operated by the Forest Service, was transferred to the Soil Conservation Service with instructions to terminate it as a separate project. The Soil Conservation Service, however, will continue the work as an integral part of the soil conservation program in soil conservation districts. This should result in a well-balanced program of soil conservation for Great Plains farmers. Public aid in the form of WPA labor to farmers planting shelterbelts has been largely withdrawn.



A partial substitute has been found in the use of planting machines developed or modified from existing equipment by forestry technicians. One of these machines, tractor-drawn and manned by two men, will plant in a day as many trees as a 20-man crew.

### BIOLOGY

During the year, major effort was directed toward those practices which contributed to defense and to an aggressive war effort. Establishment of field borders, protection of pond environs, hedge management, and the development of eroded and waste areas for wildlife are becoming generally accepted as part of soil and moisture conservation programs.

Several biology practices, which, while not excluding other needs of the land, are being widely adopted. In order of their acceptance by farmers these are: The protection and management of water supplies—ponds, reservoirs, dugouts, and springs; the protection and management of wild uncultivable lands; the protection of gullies and drainageways; and the development and management of perennial herbaceous field borders.

Most significant in relation to wartime efforts to increase food supplies has been the encouragement of fish production in farm ponds. More than 600 farm and ranch ponds have been stocked according to management plans. Attention has been given to plans for stocking temporary bodies of water with fast-growing fish for use as food; and cooperative planning with the Indian Service has also been directed toward fish production in ponds on Indian lands.

Close attention has been given to the management of wild uncultivable lands for production of furs as a contribution to the war effort. Emphasis is also being given to plants for erosion control that produce fruits and honey in order to supplement the food of rural families.

Attempts to improve the biological practices recommended have continued. Field trials and evaluation studies of 10 different practices have been conducted, with each region sharing in the work. Trials on management of farm ponds for fish production and on uses of herbaceous plants have been given most attention. Other trials have been made with direct seeding of woody plants, and stream-bank management. Studies of hedge management, and the relation of rodents to vegetation and conservation structures have also been undertaken.

Cooperative work has been undertaken with the Bureau of Entomology and Plant Quarantine, Fish and Wildlife Service, Agricultural Adjustment Administration, Indian Service, 6 State colleges, and 25 State fish and game departments. The biologists have carried the story of soil conservation to urban groups by means of printed articles and radio talks, and through contact with numerous 4-H, Future Farmers of America, sportsman, and civic clubs.

### ENGINEERING

The demands of war for greater crop production have increased farmers' needs for mechanical practices and structures to control erosion, conserve moisture, and permit better use of lands needing drainage. The demands of war likewise have greatly reduced the amount of labor, materials, and equipment available to farmers for carrying on their conservation-farming activities.



To help in meeting this situation, the Service has encouraged farmers to use as many of the simpler mechanical practices as possible. Emphasis has been placed on those practices which farmers could apply easily in the course of regular farming operations, and which provide the greatest return in increased yields as well as in erosion control. Such practices as contour cultivation, terracing, and water spreading have been given emphasis in the soil conservation districts program. Farmers can apply all of these with regular farm equipment and at slight monetary cost. A great many farmers can also build stock-water ponds with the equipment on hand, and with only a small amount of purchased noncritical materials.

Leaflets have been published explaining methods of constructing terraces with moldboard plows, 1-way disk plows, and with frescoes or slip scrapers.

As in the past, equipment not needed for other Service work was made available to soil conservation districts. There was a demand from districts for much more equipment than the Service could supply.

Rehabilitation of drainage works was carried on by CCC camps. Early in the year 44 camps were engaged all or part time in this activity, but due to curtailment of the CCC the number was rapidly reduced during the latter half of the year. Drainage rehabilitation work was completed on approximately 1,777,000 acres of land, all of which is capable of greatly increased production. The drainage work benefits much land within the drainage basins not immediately adjoining the actual work operations.

In addition, drainage was recognized as being an important problem in a considerable number of soil conservation districts. Progress was made in a number of districts in the solution of drainage problems. The increased use of flatter lands for row crops, and the installation of erosion-control practices on steeper lands secured more productive use of waterlogged lands and increased crop yields from lands already farmed.

Under the Water Facilities Program, the Service was able to render valuable assistance on irrigated lands by rehabilitation of existing systems or construction of new group or individual systems. While the primary accomplishment was in the field of irrigation, valuable work was done in providing stock water and in water spreading for production of supplemental feed. During the year, plans were completed for 1,182 projects, all involving such structures as dams, wells, pumps, and distribution systems, and rehabilitation of existing structures. Of the 1,182 plans made, 700 facilities were completed, benefiting 458,793 acres. This acreage will produce increased amounts of vital crops and will furnish improved grazing areas.

The revelation of structural and design faults in the spillways of structures transferred to the Soil Conservation Service from land-utilization projects in 1938 indicated that more detailed investigations were required. Since most of the dams in Texas, Oklahoma, Louisiana, and Arkansas have similar design and structural characteristics, it was apparent that many of them would be susceptible to flood damage. Consequently, an engineering investigation was made on five dams in the Texas Panhandle. The investigation indicated that complete new spillways were needed for four of them. Model studies have been made which served as a basis for complete new designs.

## PUERTO RICO

Puerto Rico, Atlantic outpost of the United States, is recognized as the place where agriculture is practiced more intensively than anywhere else under the American flag.

The Department of Agriculture, without knowing that it was preparing for war, has been planning programs there for a number of years. The problems were to cope with mountainous slopes, to produce crops, and to develop agriculture generally.

The insular department of agriculture rooted early, and it has always cooperated closely with the Federal and insular organizations.

The Soil Conservation Service came in 1936. At once many soil conservation demonstrations were launched which showed the farmer how to prepare his steep land for cultivation without inviting soil losses. A 5-year land use program was worked out by Service technicians in cooperation with 5,000 landowners. The Service also cooperated with county agents and vocational teachers in demonstrations and in the development of soil conservation practices on the 9 demonstration farms of the Extension Service and on the 116 vocational school farms. AAA and SCS activities in Puerto Rico have made farmers conscious of the waste they were causing by the practice of running crop rows up and down the mountainsides. Now, when farms expand to increase production of food crops, there will not be the large areas severely damaged by soil-wasting methods as during World War I. Farmers know how to prevent soil losses by use of conservation methods. Having laid a careful groundwork of preparation, Puerto Rico is now ready and willing to meet with enlightenment and with courage every condition that war may bring.

## FINDING OUT MORE ABOUT CONSERVATION

## CONSERVATION EXPERIMENT STATIONS DIVISION

Soil losses from unprotected lands were considerable during the critical spring months. There was also great acceleration of erosion in Oklahoma, Kansas, Missouri, and other nearby States, during October and November. The entire central and upper Mississippi Valley area had heavy and continuous rainfall during the spring and early summer. These areas suffered from erosion and floods.

Studies, conducted at the Nebraska Agricultural Experiment Station and at other stations in the semiarid region on the use of crop residues for mulch and methods of stubble-mulch cultivation, continued to demonstrate that these practices would conserve soil and moisture. This work is important because when applied it will increase the acreage of land in the semiarid farming regions which can be used for wheat production and will benefit all kinds of cultivated land.

Stubble-mulch work, terracing, water-spreading diversion, and other practices will allow some marginal lands to be farmed successfully and with a minimum of damage to the soil.

The year brought a development of interest in stubble-mulch culture in the more humid areas of the Corn Belt States. Research studies on methods of using stubble-mulch tillage machinery in growing corn are under way in Iowa, Illinois, Missouri, and other Corn Belt States.

Contour tillage and other conservation measures helped control soil and water losses. Substantial gains in yield of potatoes were made over the check areas. Conservation of soil and moisture in grape vineyards, planted and cultivated on the contour, has also brought increased yields from the contoured areas.

The competition for nitrogen of the rapidly decomposing straw or other highly carbonaceous plant materials, when used as mulch, can often cause a serious depression in wheat yields in the northwestern wheat-growing areas. Experiments with peas sown in the stubble of fallow wheatlands indicate that sufficient growth of peas can be secured to meet the nitrogen requirement of the stubble mulch without serious depletion of soil moisture. Growth of the pea vines is stopped by stubble-mulch farming after the peas have reached about a foot in height or if soil moisture appears to be limited.

Field trials on the effectiveness of contour tillage and other moisture-conserving practices on the yields of soybeans and peanuts grown for oil production were made in the Corn Belt and Southern States. A crop rotation was designed by the Missouri station for growing soybeans on the Putnam soils of Missouri with a minimum of erosion hazard.

A method was developed to determine the rate of subsurface movement of water so that curves of the advancing water front can be determined. An improved method of calculating the proportions of a storm which enter the soil, go into surface runoff, and remain upon the land surface to be later evaporated, was also developed from the work at Colorado Springs and Edwardsville, Colo.

### HYDROLOGIC INVESTIGATIONS

Ground-water and run-off figures during the year were made available to power companies engaged in supplying hydroelectric current to vital war industries. Data on frost, soil temperature, and soil moisture under conditions of melting snow run-off were used in Michigan by highway transportation officials to determine safe highway loads and to aid in routing commercial and military truck traffic. Hydrologic data from various field research stations were furnished to the United States Army, Public Roads Administration, and to consulting engineers for their use in designing drainage systems for airports; storm drainage works for Army cantonment sites, ordnance works, roads, and bridges; and other construction purposes.

Studies of the hydrologic importance of crop-residue mulches—stubble mulch—have been conducted at Hastings, Nebr., and are under way at Lafayette, Ind.; College Park, Md.; Cherokee, Okla.; East Lansing, Mich.; and Coshocton, Ohio. The results at all these locations have shown that stubble-mulch tillage has notable value in decreasing run-off and erosion, especially during periods when the soil was unprotected.

The hydrologic bulletins in the new departmental series have established a permanent record of basic hydrologic data which has been used by the action agencies of the Department of Agriculture and by the War Department in dealing with run-off problems in Army camps and airports where similar conditions are encountered. The Public Roads Administration and several State highway departments are employing this information for use in designing culverts, weirs,



check dams, and diversion ditches, and are giving data of value to municipal engineers, railroads, utilities, and others who have water-supply and water-control problems.

Run-off studies were conducted on 27 projects during the year. Records of the principal storms and resultant run-off at Freehold, N. J., have been furnished the United States Engineer Office, Philadelphia, Pa., for use in the design of drainage facilities, for military areas. Similar records of run-off from the Bentonville, Ark., project were given the Army Engineer Corps to aid in the design of a proposed airport. Similar data from the Colorado Springs, Colo., project were used by consulting engineers and architects at Camp Carson in the design of storm-water disposal structures. Figures from the Fennimore, Wis., project were made available to consulting engineers in connection with the location of drainage structures at Camp McCoy near Sparta, Wis., and at the Technical Training Command Radio School at Madison, Wis. Requests for rainfall run-off data have been received from other United States Engineer offices and this information has been used also by such agencies as the Upper Susquehanna Flood Survey Unit at Binghamton, N. Y.; the Farm Bureau of Steuben County, N. Y.; the Agronomy Department of the Cornell Agricultural Experiment Station; the Biology Department of Virginia Polytechnic Institute; the Tennessee Valley Authority; and the Pennsylvania Water & Power Co., Baltimore, Md.

Improved culverts and other installations have been designed in cooperation with the Minnesota Agricultural Experiment Station at the St. Anthony Falls Hydraulic Laboratory. The new type of outlet designed at the laboratory is economical and simple and practically eliminates erosion in the stream channel below the structure.

Hydraulic tests in the Outdoor Laboratory at McCredie, Mo., have shown the relative value of four types of vegetation for outlet channels. The grasses used consisted of redtop and timothy in a mixture, Canada bluegrass, Kentucky bluegrass, and brome grass.

Similar channel studies, carried out at Spartanburg, S. C., during the last year, have been completed and have shown the relative value of a variety of vegetative cover under southeastern conditions. This work has now been transferred to Stillwater, Okla., where similar data will be made available for use in the central Southwest.

Field studies of the mechanics of the erosion process under irrigation, carried out in cooperation with the Oregon Agricultural Experiment Station, have shown the importance of controlling the size of the stream used in irrigation in order to reduce soil loss when growing a variety of emergency crops, such as garden peas, sugar beets, corn, and soybeans.

Further studies along this line have been made as part of the Department's work on the Columbia Basin Federal irrigation project. As a result of cooperative research carried out at Prosser, Wash., it has been shown that close control of the supply of irrigation water flowing into a furrow or onto a field is of paramount importance in preventing loss of soil and water.

The Nation's reservoirs, which supply 33 percent of its electric power and 20 percent of its population with water, must be made to last at a time when labor shortages restrict reservoir construction. Vital war industries and military establishments depend on maintenance of these facilities. Results of research during the last 7



years on reservoir-silting control methods have been prepared for publication in a report that describes the use and effects of reservoir capacity-inflow ratios, raising dams, settling basins, vegetative screens, bypass canals, off-channel reservoirs, venting density currents, controlling waste-water release, excavation, dredging, sluicing, and erosion control on the drainage area.

As a result of an extensive silt-sampling program at Lake Issaquena near Clemson, S. C., it has been determined that in this typical Piedmont reservoir, underflows of silt-laden water (density currents) pass through the lake after practically every flood, and that quantities of silt sufficient to lengthen appreciably the useful life of the lake can be vented by proper control of the outflowing water.

Assistance in planning silting control has been given to various reservoir owners during the year. For example, as a result of findings of sedimentation research, the Washington Suburban Sanitary District is incorporating outlets for venting density currents in its new dam on the Patuxent River, in Maryland, at an added cost of a few thousand dollars and a prospective saving of a notably larger amount in years to come. Important progress has been made on the classification of the fundamental mechanism of suspended sediment transportation.

The development of a portable measuring device has permitted, for the first time, the direct measurement of the bed load of small streams. From these measurements a formula and method for calculating the bed load in any small stream has been developed.

A study of the use of heavy minerals to determine sources of sediment has resulted in an improved technique for finding the relative amounts of material furnished by different sources of erosion debris. The results of this study are awaiting publication.

Special investigations have been made for the Navy Department during the year, and cooperation was developed with the Corps of Engineers, United States Army, on a project of military importance.

#### CLIMATIC AND PHYSIOGRAPHIC RESEARCH

During the last year the statistical analysis of drought has been applied to the data from 125 well-distributed stations in the United States, and the results presented in graphical form so that the probability of drought or of precipitation of various specified amounts can be determined for any time interval for any part of the country. From this analysis the time of the year that is best for undertaking various erosion-control operations can be determined. This method of analyzing drought has important military value and in cooperation with the Army Air Corps the work is being extended to determine the best time of year to undertake special types of Army campaigns.

Equipment for measuring evaporation was installed over the water surface of Lake Corpus Christi in Texas in order to provide data for anticipating water supplies for the Naval Air Station. Daily observations, with certain unavoidable omissions, have been obtained since February 1942. In connection with the investigation of atmospheric turbulence, basic to the study of evaporation, many observations on the change of wind velocity with height above the ground were made, and a new law of wind structure was discovered. This gave valuable insight, not only on the problem of evaporation, but also on problems of wind erosion and dune formation.

As in previous years, the Climatic Research Center at New Philadelphia has published monthly summaries of precipitation in the Muskingum Basin of Ohio, as recorded by a network of over 250 meteorological stations. Hourly and daily precipitation for each station was given by tabulations and the daily precipitation was also presented on maps. Compilation of hourly tabulations of precipitation of more than 140 rain gages in the Ohio Valley region was continued. These data were published in the monthly volumes of hydrologic data issued by the Weather Bureau in cooperation with the Corps of Engineers. Five monthly volumes of maps of hourly precipitation on the upper Ohio and Susquehanna drainages were issued, thereby completing a series of 12 months. Reports were prepared on the geology and physiography of the Muskingum Watershed of Ohio in relation to soil erosion and floods, and on the relation of the repeating pattern of physiographic forms and the accompanying pattern of thick and thin soils in the southern Piedmont to planning for conservation and safe land use in the characteristic small head-water drainage basin.

### ECONOMIC RESEARCH

During the past year field studies covering the economics of sedimentation of irrigation reservoirs in the Pecos, Rio Grande, and Gila River watersheds in New Mexico and Arizona have been completed. The information so obtained has shown the possibilities for safe increased production of specific crops as a war measure.

A recent development at several field projects has been the establishment of an experimental set-up in soil conservation farm-management research. In this work, the economic research analyst has cooperated closely with farm planners and has aided them in determining the best type of farm plan to be followed. There has been an annual check on the physical and economic performance of the planned farms. Farm plans for soil and water conservation by this method have been followed in West Virginia, Pennsylvania, Illinois, Wisconsin, and Minnesota.

Studies in Minnesota and Wisconsin have given further information on the value of improved pastures for economical production of livestock and dairy products. Studies of the farm records and accounts taken from representative groups of farms selected on the early demonstration projects have aided in planning the new districts program of the Service. These studies have demonstrated the necessity for considering the farm business as an integral unit including possible income from wood lots and improved farm pastures.

Studies during the last year, have shown that contour cultivation is not a time-consuming operation, and that up-and-down hill farming was no easier on livestock, machinery, or human beings.

### HILLCULTURE RESEARCH

Intensive study has been carried out by the Hillculture Division both in the Southwest and in northern Mexico for possible substitutes for imported legumes and other seeds that have furnished mucilaginous products important for sizing paper and for other industrial uses. Studies have been made, in cooperation with the Bureau of Plant Industry, of the erosion-control use, distribution, and cultivation of a

number of plants as possible sources of rubber. These have included *Cryptostegia* in northern Mexico, preliminary trials of the Russian rubber-producing dandelion, *Taraxacum kok-saghyz*, and various species of dogbane, *Apocynum*, in the New England States. Field trials, for erosion control, of these and other promising plants have been set out in Iowa, Alabama, and California. Assistance has been given the Navy Department in its effort to obtain milkweed floss as a substitute for kapok.

Studies of possible substitutes for Sicilian sumac tannin from domestic sources in the Eastern States have shown that ample supplies of harvestable wild sumac can be obtained in the Coastal Plains and lower Piedmont areas provided an effective program for collecting, drying, and storing the sumac can be developed. Test plantings of various sumac species have been made in Iowa and Maryland to determine their value for erosion control, and also to develop high-tannin-yield strains.

As a part of the Food-for-Freedom program, farm plans have been developed in North Carolina, Mississippi, and Georgia that would furnish farm families a year-round supply of home-grown products rich in vitamins and available nutrients.

During the year, over 100 new superior selections of erosion-control plants of economic value have been made and material gathered for more extended field trial. Prominent among these have been hardy, native dewberries and blackberries adaptable to erosion-control use in the Southeastern States where a growing canning industry uses these berries. In addition, numerous selections have been made of promising strains of white poplar of special value for veneer wood use.

Increases in yields have been obtained in southern Maryland by using hillculture technique for planting tobacco on sloping land. In these tests, the use of row grades up to 1 percent was found superior to the exact contour planting to control erosion. The use of a straw mulch was found effective in eliminating soil washing on slopes up to 10 percent.

In experiments carried out in Alabama, which had been established on terrace-grade planting, the use of buffer strips of kudzu, a new and promising technique for adding organic matter to intervening areas devoted to corn, has been found successful.

In experiments carried out in southeastern Iowa it has been found possible to reclaim badly eroded sites by the use of selected native prairie grasses.

In experiments carried out in Maryland, it has been possible to establish Asiatic chestnuts by underplanting areas of Virginia pine with vigorous planting stock. In some cases the pines were thinned later to reduce the shade and root competition. The chestnuts planted in this manner upon eroded sites are making excellent growth and many have produced considerable crops of salable nuts after four growing seasons.

#### FARM-DRAINAGE INVESTIGATIONS

Intensive cooperative studies have been carried out in Minnesota during the last year to develop a relatively short-time laboratory test that will indicate accurately the suitability of various cements for manufacturing acid- and alkali-resistant drain tile. Two tests have been found to be quite accurate for this purpose.



The method developed at this project of steam-curing concrete tile at temperatures above 212° F. has been found to give excellent resistance to the decomposing effect of soil acids or alkalies, and is now being adopted commercially on a considerable scale.

Drainage studies in the Florida Everglades have shown the importance of keeping the ditches clear from dense growth of water hyacinths. The channels used were approximately 60 feet wide, with a flow depth of about 10 feet. Careful determinations showed that the vegetal growth caused approximately a 50 percent reduction in flow and notably reduced the efficiency of the drainage systems in the Everglades. After the channels were allowed to become completely overgrown, it cost about \$250 per mile to remove the hyacinths, but a small force was able to maintain the channels in a reasonably clean condition, provided a dense growth was not allowed to form.

Careful determinations of the precipitation, evaporation, and depths of water pumped have shown clearly that there is an appreciable ground-water flow in the Everglades area in Florida. This ground-water flow into the experimental tract of 200 acres was found to be about 1.4 feet in depth per year. The experimental area is located adjacent to the Hillsboro canal and it therefore appears likely that the ground-water seepage is higher than in the Everglades as a whole. Supplemental studies indicated, however, that this same factor is operative over large areas of the tract, and accounts for part of the volume of water that has to be handled by pumping.

#### FARM-IRRIGATION INVESTIGATIONS

Studies of the utilization of irrigation water have been conducted in a number of important western areas. A comprehensive report upon the San Jacinto Basin, Calif., covered the problems of agriculture, water supply, irrigation, and indicated possible economies in the use of water.

Further work was done upon the water problems of the Pecos River Basin in New Mexico and Texas, including estimates of the probable past and future consumptive use of water by native vegetation on waste areas compared to that required on the irrigated lands of the Pecos Valley. A related study near Fort Stockton, Tex., reported possible water economy in irrigation of alfalfa, cotton, and grain crops.

Cooperative studies in the San Luis Rey Valley in California have covered the use of water by irrigated crops, the efficiency of irrigation, fluctuation of ground-water levels, evaporation, rainfall, stream flow, and related hydrologic factors essential for a complete inventory of the water-supply problems of the area. Determinations were made on the rate of contamination by sea water of the lower ground-water levels of the San Luis Rey River Basin, an area close to the defense industries of southern California, part of which is being used by the United States Marine Corps.

Work was continued on the irrigation problems of the San Fernando Valley, Calif. Approximately 200,000 acres of this area is under irrigation and produces crops valued at approximately \$65,000,000. The use of water by various crops has been determined in this area for the past 15 years. The work has centered upon a deter-



mination of improved farming methods under irrigation so that more efficient methods can be developed with greater water economy and lower charge for irrigation. .

Cooperative studies have been under way with the city of Pasadena, Calif., to determine the possibility of recharging underground basins through deep percolation of rainfall in order to improve the ground-water supply along the San Gabriel River Basin, where the use of water is important to farmers, local irrigation companies, and rural communities.

In Utah, tests made in the last year have shown clearly that the most important factor in obtaining maximum efficiency in the use of irrigation water is to avoid the application of excessive amounts in single irrigations with subsequent loss by percolation into the lower ground water. These studies promise to have important applications in the conservation of water in a number of western irrigated areas.

Further improvements have been made in the design of a combination head gate and sand trap used on large irrigation canals along the Arkansas Valley in eastern Colorado, where the deposition of sand and silt has been an acute problem for many years.

Increasing use has been made of the Parshall measuring flume developed by the Division of Irrigation, which has been found increasingly effective for the distribution of small flows where accurate measurement of the stream of water is highly important.

Improved methods of measuring the efficiency of pumping plants with a current meter were reported during the last year.

Under present conditions, with priority on construction materials assuming constantly increasing importance, it has been found essential to determine the life expectancy of various types of material used in irrigation structures, including wood, iron, and concrete. The data made available in this way is proving of value to irrigators on western farms.

Studies of underground storage of surplus water on Cucamonga Creek and the upper Santa Ana River, Calif., showed a continuation of percolation of the run-off water supplied by the exceptionally wet season of the previous year. Work was likewise continued in the San Bernardino Artesian Basin and in the Yucaipa Valley, Calif., where records have been kept of the ground-water levels which are of great importance to the irrigators in these areas. Attention has also been given to the possibility of recharging the ground water in the Antelope Valley, Calif., where a preliminary study of the problem was carried out.

Snow surveys were carried out in each Western State and monthly reports of snow conditions have proved of great value to farmers who depend on snow water. These surveys are proving of special importance at this time to communities with defense industries that derive part of their water supply from the mountain areas. With the shortage of manpower to cover the snow courses, a new type of snowmobile for mountain travel was constructed that has proved highly effective and adaptable to snow travel over a variety of conditions.

In Utah, canal ditches have been lined with clay to reduce water losses. A clay layer about 3 inches thick was applied to the inside of the ditches and a fine gravel blanket of about  $1\frac{1}{2}$  inches was then put on. The average reduction in loss approximated 4.2 second-feet

for the experimental canal under observation, representing a monthly saving of more than 250 acre-feet.

Cooperative investigations have been conducted in Texas of methods of control of silt in irrigation ditches and reservoirs. In addition, tests have been carried out of the suitability of various clay deposits for the construction of local reservoirs and dams.

### EVALUATION STUDIES AND FIELD TESTS

Field tests combined with evaluation studies have continued to be an effective method of carrying research findings to the field and trying out new procedures under a variety of conditions. This has been especially true since the wartime demand has arisen for increased production of critical crops and livestock products.

Studies of the effects of conservation practices on the maintenance of soil depth and the resulting influence on crop yields have proved to be especially valuable. Earlier studies at a number of research stations had shown that the loss of plant nutrients in eroded soil represented a more rapid reduction of the amounts originally present in the surface soil than would take place through absorption of plant nutrients by crops.

Analysis of organic matter and nitrogen of the upper 3 inches of soil in a cultivated field where only 5 inches of topsoil remained, have shown percentages of these important constituents that were slightly lower than those found in the 3-inch layer below 9 inches of topsoil of a virgin bluestem pasture. Very little erosion had occurred in this pasture and the topsoil averaged 12 inches in depth.

On cultivated land the percent of organic matter found in the plow depth (7 inches) varied from 2 percent where less than 2 inches of topsoil remained, to more than 5 percent where the topsoil was in excess of 12 inches. The data showed further that the organic matter and nitrogen had been lost at a more rapid rate than had the entire soil mass.

Further detailed studies of the relation between corn yields and depth of topsoil on areas near Bethany, Mo., showed an average yield of 20.1 bushels for land having less than 2 inches of topsoil, and 67.5 bushels where the topsoil was more than 12 inches deep. Similarly at Fowler, Ind., the average corn yield over a 2-year period on some 18 fields was 37.1 bushels on areas having less than 2 inches of topsoil, as contrasted with 81.5 bushels on areas having more than 1 foot of topsoil. Similar relationships were found near Bedford in southern Indiana, at Coshocton, Ohio, and at Greenfield and Shenandoah, in Iowa.

Evaluation studies carried out on two areas of Shelby loam near Bethany, Mo., gave an interesting example of the value of an integrated program of conservation farming. The two fields had received similar treatment up to 1935, when a complete program of conservation farming was started on one tract. This included a 3-year rotation, with only 1 year of corn, combined with the use of soil amendments, fertilizers, and contour cultivation. The comparison field was continued in corn and small grain without other treatment. After 5 years a survey of each area showed that the highest yields in both fields were associated with the greatest depth of remaining topsoil. The average yield of corn on the land where conservation practices

had been used was 69.7 bushels per acre, while on the untreated land only 32.6 bushels was obtained as an average. Measurements of the depth of topsoil on the two areas indicated that the contour cultivation and additions of organic matter used under conservation farming had helped to stabilize the topsoil and reduce soil loss on this land to a measurable degree in 5 years' time.

### STATES RELATIONS

Under the stress of war, teamwork, particularly in soil conservation districts, has become more important. The teamwork of the Service involves assistance to governing bodies of soil conservation districts and groups of farmers and ranchers, and cooperation with various agencies in the States and in the districts. The State soil conservation advisory committees, composed in most States of the director of the State Extension Service, the director of the State experiment station, and the State conservationist of the Soil Conservation Service, have helped develop State soil conservation programs, and helped coordinate the conservation activities of various agencies. In many States the State administrative officer of the Agricultural Adjustment Administration and this committee have worked together.

The Service during the year cooperated closely with the State soil conservation committee (board or commission) in each of 42 States having soil conservation districts laws. These official bodies established by State laws are working with local people in creating soil conservation districts that are legal subdivisions of the States. They also aid the governing bodies of established districts in accomplishing their objectives.

In assisting soil conservation districts, working arrangements were further perfected with various State and local agencies and State and local representatives of Federal agencies. This mutual assistance has been of great value in facilitating soil conservation and in coordination and efficiency of public assistance to farm and ranch people. In these soil conservation districts the use of practices to increase production and conserve the soil has become more widespread through neighborhood group cooperation and farmer leadership during the year.

The extension services in 38 States, Hawaii, and Puerto Rico have employed extension soil conservationists in cooperation with the Soil Conservation Service. These specialists lead in soil conservation education in the State, working with other State extension workers, with county agents, vocational agriculture teachers, district supervisors, and others, and are aided by SCS workers. Under their leadership, county agents and SCS technicians collaborate in selecting and developing representative farms and ranches as soil conservation demonstrations. A total of 4,673 such demonstration farms, embracing 3,301,722 acres, have been established in 46 States and the Territory of Hawaii. Of this total, 971 were established during the fiscal year 1942.

Early this year the Soil Conservation Service started working closely with the State extension services, the State experiment stations, and the Agricultural Adjustment Administration in the various States in a special effort to help farmers and ranchers increase production through appropriate land use and soil conservation practices,



and to prevent soil wastage in attaining the agricultural production necessary in 1942. Where the production of food for wartime needs developed critical soil problems, recommendations for land use and conservation practices were made. The experience and progress of this effort in the spring and summer of 1942 led in many States to a more effective joint effort in soil conservation for production.

The Soil Conservation Service likewise has cooperated with State agencies in the training of farmer leaders in the application of simpler conservation practices. Thus, effective soil conservation practices are being spread widely and production of needed food products is being increased.

In addition to work to increase production, the SCS personnel have shared many other wartime activities with other Department of Agriculture agencies, State agencies, and State and county War Boards. Such activities have included organization and follow-up for various war-material salvage campaigns, aiding in securing farm supplies and equipment, repair of farm machinery, and war-bond sales campaigns.

#### ASSISTANCE TO SOIL CONSERVATION DISTRICTS

More than one-third of the farms in the country were in established soil conservation districts by June 15, 1942. These farms covered 452 million acres in 41 States. The districts numbered 771.

Before the districts are formally established the Service gives assistance by making conservation surveys, in organizing, and in formulating a district program and work plan. The 639 districts that have signed memoranda of understanding with the Department and the Service have had Service personnel definitely assigned to them. Through these districts, individual farmers and ranchers have also been able to secure for use on their own units equipment not generally owned by individuals and materials not generally available to them.

Since the soil conservation districts are local autonomous governmental subdivisions, organized and operated by farmers and ranchers, they may obtain assistance, not only from the Service, but also from local, State, and other Federal sources, and from private sources. Some of the districts are obtaining assistance from as many as 15 sources. Thus the operations of the districts indicate the pooling of conservation efforts now so essential to produce the commodities needed to win the war as well as to build a permanent agriculture.

#### ADMINISTRATION

On December 13, 1941, Secretary Wickard issued a reorganization order which placed the Soil Conservation Service, Agricultural Adjustment Administration, Federal Crop Insurance Corporation, and the Sugar Agency under the Agricultural Conservation and Adjustment Administration. R. M. Evans, former AAA Administrator, was named to head this new administration, with Dillon S. Myer, Assistant Chief of the SCS, as Assistant Administrator.

On January 12, 1942, Secretary Wickard announced that all the functions, duties, and responsibilities of the SCS in the water facilities program would be transferred to the Farm Security Administration, effective July 1, 1942.



On March 16, Dillon S. Myer was named Acting Administrator of the ACAA, succeeding R. M. Evans, who was appointed to the board of governors of the Federal Reserve System. In June, however, Mr. Myer resigned to become head of the War Relocation Authority, and M. Clifford Townsend, former Chief of the Office of Agricultural War Relations, was named administrator of ACAA.

On May 5, public announcement was made of an impending reorganization of the SCS, to be effective July 1, 1942. This reorganization eliminated three regional headquarters, and abolished area offices and State Coordinators' offices. State offices were to be established in each State. Other economies were also effected during the year.

The Washington and Regional Budget and Finance offices conducted studies to reduce the number of copies of fiscal documents, which had previously been prepared and filed. These studies led to changes in procedures whereby it was possible to prepare and file fewer copies of various documents and, consequently, to save a material amount of both time and space. Other changes of a similar nature have resulted in a simplification of the techniques and methods of handling the financial work. These procedures have proved of assistance in keeping the cost at a minimum despite a great loss of trained personnel.

The following is a list of the funds available to carry out programs of the Soil Conservation Service during the fiscal year 1942:

Regular appropriation.....	\$22, 218, 182. 58
Submarginal land purchase and development.....	2, 256, 693. 77
Cooperative farm forestry.....	127, 969. 00
Civilian Conservation Corps.....	7, 081, 616. 00
Selective Service.....	107, 124. 00
Water facilities.....	528, 525. 00
Flood control.....	819, 625. 00
WPA and PWA.....	258, 595. 00
<b>Total.....</b>	<b>33, 398, 330. 35</b>

In addition, working funds amounting to \$723,748 were established with funds made available by the War Department. A portion of the funds was for use in financing a program of land acquisition for the War Department. Other portions of the funds transferred were for use in surveying and mapping strategic areas and for carrying out a program of revegetation and erosion control at Army posts.

### AGRONOMY

At the request of the Repair and Utilities Branch, Construction Division, United States Army Engineers, a number of former SCS agronomists have been employed in the various Service Commands, and are now on the War Department payrolls. Other agronomists have been commissioned in the Army to supervise the planting work throughout the United States.

Such work includes the maintenance of turf on airfields, and the repair and maintenance of grounds to prevent and control destructive wind and water erosion which are matters of first priority.

The whole field force, trained in the use of plant material for erosion control, has assisted the Army in the use of vegetative material, not only for protecting the soil in vulnerable places in military areas, but also for establishing camouflage.

In the vicinity of important coastal defenses, during recent years, several thousand acres have been planted to European beachgrass, American dunegrass, sealyne grass, beach peas, seashore lupines, seashore bluegrass, and red fescue with the help of the CCC. Consequently the expense of keeping beach roads open is now greatly reduced. Some 4 million dollars' worth of coast-artillery works and rifle-range pits are now protected from burial by wind-blown sand. By using vegetation to hold the soil in place and to allow more of the rainfall to soak into the ground, millions of dollars' worth of property are protected by the work of this Service against damage by flood-water, dust, and silt. Roads and bridges essential in troop-training operations are also kept open.

By combining the use of crop rotations, legumes, cover crops, mulch, lime, fertilizer, terraces, grassed waterways, contour tillage, and strip cropping, not only can destructive soil losses be stopped but yields of crops can also be increased substantially. The experiences of farmers cooperating with the Soil Conservation Service throughout the United States have demonstrated the extent of these increases in crop yield resulting from the use of a soil-conserving program on their farms.

Records of increases of production as a result of adopting conservation practices have been obtained with potatoes in New York and Maine; beans in New Mexico; corn in Ohio, Indiana, Missouri, Iowa, Nebraska, and South Carolina; hay in Iowa; tomatoes and sweetcorn in New Jersey; cotton in North Carolina and Texas; pasture in Georgia, North Carolina, and Illinois; grain sorghums in South Dakota and Texas; beef in Texas, New Mexico, South Dakota, and Montana; mutton and wool in Colorado and Idaho; milk in Pennsylvania, California, and Washington; and pork and butterfat in Wisconsin.

Throughout the country and especially in the Southern and Western States there are millions of acres, abandoned for crops or near abandonment, that can profitably be employed in the interest of national security during the war by planting them to grass to provide more forage for livestock. In the 6 Southeastern States, from the Carolinas to Mississippi, during the last 7 years fully 400,000 acres of permanent pasture and meadowland have been established by farmers cooperating with the Soil Conservation Service. In addition they have planted over 200,000 acres to kudzu and sericea lespedeza. Land that was yielding nothing is now producing a ton of hay, 150 pounds of beef, or 30 bushels of corn per acre.

In the 4 South Central States, Arkansas, Louisiana, Oklahoma, and Texas, with over 58 million acres of cropland, there are over 8 million acres that should be in grass. In some wheat counties, as much as one-fourth of the cropland would produce more and be more profitable in grass than in cultivation. During 1941, the Service helped farmers in the seeding of about 100,000 acres of such land, in addition to reseeding some 35,000 acres of old pasture and range. Two thousand farmers in these States made new plantings of kudzu supplied by Soil Conservation Service. In the southern Great Plains some of the worst plow land has been covered with grass, and all of it can and should be producing beef again.

In the northern Great Plains conditions are even more favorable for reseeding abandoned land, and using grass in crop rotations, on

account of the well-adapted crested wheatgrass. For success in establishing stands, early grazing and yields of hay, crested wheatgrass is proving itself superior to the native grasses.

Out of 774,000 acres of such land in the northern Plains planned for seeding, 655,000 acres have been reseeded. Some of the soil conservation districts in the Dakotas are producing grass seed for their own use. The production of brome grass seed has increased greatly in the Papio and Turkey Creek Soil Conservation Districts in eastern Nebraska.

In Oregon and Idaho grass seedings on over 40,000 acres of abandoned fields purchased by the Government have been successful to the extent of 95 percent.

In the Pacific Northwest and parts of the Great Plains mulch tillage is being practiced on hundreds of thousands of acres to check erosion by wind and water, to get more water into the soil, and to hold it there for growing crops. Several companies are making a variety of implements designed to work the ground without turning it over and to keep the stubble and other crop residues on top of the ground or near the surface as a protective mulch. Many farmers have succeeded in changing their regular equipment to do a good job of mulch tillage, for example, removing the moldboards from their plows. While this practice of stubble-mulch tillage is spreading rapidly, it is hampered at present by the scarcity of steel to make new implements.

Conservation farming has proved to be more efficient in the use of power and labor. In eastern Nebraska, raising corn on the contour saved 9½ hours of labor and 20 gallons of fuel for 40 acres. Similar savings have been recorded in Kansas, Wisconsin, Ohio, West Virginia, and Pennsylvania. In New York, a survey of 300 farms showed that the rows in contour-farmed fields are over one-fourth (26.9 percent) longer than in square fields farmed up and down hill. Longer rows result in less waste of time and vegetation in turning. Furthermore, following conservation plans and practices in land use have resulted in a much more even distribution of labor.

### PUBLICATIONS

Thirty-nine printed publications were issued by the Service during the year. These bulletins furnish farmers with information on methods of conservation farming that will enable them to increase the output of food, fiber, and oils, and to maintain the fertility of their soils for the continued heavy production that will be required by the War.

Bulletins of direct benefit to the farmers in soil conservation districts are Miscellaneous Publication 448, Soil Conservation Districts in Action on the Land, and five Physical Land Surveys prepared for important farming areas in Illinois, Nebraska, Georgia, Indiana, and Kansas. Bulletins designed to serve the farmers of an entire region are the Cotton and Tobacco South, and New Landmarks of Soil Conservation (Southern States edition).

Fourteen illustrated folders (in the Save Your Soil series) have carried practical instructions to farmers of the Great Plains States on contour-strip cropping, grassed waterways, range improvement, stock-water dams, water spreading, and other means of increasing crop yields by conservation methods. Farmers' Bulletin 1900,



Pastures to Hold and Enrich the Soil, was given Nation-wide distribution for the instruction of dairymen and stockmen on the maintenance of wartime pastures.

Three hydrologic bulletins furnished data on typical watersheds of the Northern Appalachians, the Blacklands of Texas, and the central Great Plains for the use of several Government agencies in flood control, erosion prevention, and reservoir protection. Other scientific publications of the Service on erosion, evaporation, and climatic conditions have proved of special value to the Army.

A total of 213 articles and papers by specialists of the Service have been edited and approved for scientific journals, professional meetings, and farm journals.

A marked increase in the demand for printed bulletins of the Soil Conservation Service has pushed distribution beyond all previous records to a total of 3,159,016, an increase of 1,324,585 over the distribution in 1941. The distribution of mimeographed material has decreased from 100,425 in 1941 to 41,095.

The publication of Soil Conservation, the official publication of the Service, was continued. Twelve monthly issues of the magazine carried 304 pages, 48 covers, 111 major articles, 18 book reviews, 12 full-page reference lists, 189 halftone illustrations, and 15 line-cuts. Recurring themes were "defense of the land," and soil conservation districts. Special issues were devoted to districts, and to biology and land use.

After December the magazine was largely devoted to wartime articles about soil conservation. Some of the most outstanding were: R. E. Uhland's Increased Yields from Conservation; Glennon Loyd's Selective Service for Each Acre; W. C. Lowdermilk's The Flag Is on the Plow; C. R. Enlow's Crop Husbandry in This Year of War; H. H. Bennett's Look at America—A Great Democracy Does Things! A number of these articles were broadcast to Latin America and were widely reprinted. A large part of the magazine was devoted to expanding farm production. Outstanding articles on this subject were The Story of Ed Ogg and Growing Soybeans with Minimum Erosion.

The July 1942 issue completed Volume VII and a new format was adopted for the duration. This format, in conformity with war needs, provides a less costly type face, fewer pages per issue, a larger type page, and economies in paper and production.



# REPORT OF THE MANAGER OF THE FEDERAL CROP INSURANCE CORPORATION, 1942

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL CONSERVATION AND  
ADJUSTMENT ADMINISTRATION,  
FEDERAL CROP INSURANCE CORPORATION,  
*Washington, D. C., September 15, 1942.*

MR. M. CLIFFORD TOWNSEND,  
*Administrator, Agricultural Conservation and Adjustment Administration.*

DEAR MR TOWNSEND: Submitted herewith is the annual report of the activities of the Federal Crop Insurance Corporation for the fiscal year ended June 30, 1942.

Sincerely yours,

LEROY K. SMITH, *Manager.*

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## CROP INSURANCE IN WARTIME

Wheat and cotton crop failures, which occur somewhere in the United States every year, have forced thousands of farmers to abandon their farms, leaving manpower, machinery, and land idle. In peacetime this is tragic; it is much worse in wartime. To fight this war it is as important to keep the farm production plant in good working order as it is to keep industrial war production plants humming at full speed. The crop insurance program helps to keep farmers on the land and producing through distribution of premiums paid in by all insured growers to those who lose their wheat or cotton crop to unavoidable hazards.

Abundance of wheat and cotton does not lessen the need for guaranteed yields of these two crops. Many wheat and cotton producers are wisely adjusting their acreages downward, and this makes it more important than ever that they be assured a reasonable return from the acres they do plant. That guarantee should give producers courage and greater ability to turn to the production of the farm commodities we and our allies need. Other advantages to a nation at war, stemming from stabilized farm income, are higher morale and lighter relief loads, which in turn mean more taxpayers better able to help share the cost of the war.

The Federal Crop Insurance Corporation is beginning its fifth year of insurance experience on wheat and has started to pay early losses on the first insured cotton crop. Although it would take legislative authority to extend the program to other crops, the Corporation, with its trained personnel and experience, is now in a position to insure on a reasonably sound basis experimental and other crops to stimulate their production for war purposes. Guaranteed income from the production of experimental plants such as rubber and drug-producing plants, of which this country has heretofore had an insufficient native supply, would certainly be one means of stimulating farmers to produce them. It is logical to believe that insurance on other crops of which we have an inadequate wartime supply, such as peanuts, soybeans, flax, hemp, and certain vegetables, would stimulate their production.

#### WAR HAZARDS

The war has created new hazards to production—hazards that were not contemplated when the Corporation's actuarial structure was built—but to carry out the spirit of "all-risk" protection as authorized by the Crop Insurance Act, coverage has been extended to include certain types of losses that might result from war conditions. Such hazards fall into two categories: (1) Those caused by direct enemy action or action by our own armed forces in defense of the country, and (2) those resulting from inability of producers to obtain labor, fertilizer, machinery, insect poisons, and other farming essentials, owing to war conditions.

Authority to include such war losses under a crop insurance contract is found in section 508 (a) of the Crop Insurance Act. Therein the Corporation is authorized and empowered to insure

... producers of the agricultural commodity against loss in yields of the agricultural commodity due to unavoidable causes, including drought, flood, hail, wind, winterkill, lightning, tornado, insect infestation, plant disease, and such other unavoidable causes as may be determined by the Board.

In settling losses caused by the inability of the insured to obtain labor, materials, and other farming essentials due to war conditions, it is largely the responsibility of county committees to ascertain what portion of the loss was caused by war shortages and what portion by normal unavoidable causes. They are also required to determine that the insured made a reasonable effort to obtain the necessary labor and materials. An important factor in making this determination is the effort made by uninsured growers to obtain these necessities. Any savings in cost the insured grower may effect through inability to hire labor or buy machinery, repairs, or materials to produce and harvest the crop are deducted from the indemnity. This eliminates any possibility for the grower to profit from shortages caused by war conditions.

## BENEFITS GEARED TO PARTICIPATION

The public good that can come from insured yields depends, of course, upon the number of growers that participate in the plan. Table 1 summarizes the participation by growers in the wheat insurance program and benefits accruing to them therefrom for the 3 years 1939-41. It will be noted that there has been a substantial year-to-year increase in the number of participants in the program. It is currently estimated that insurance was written on over half a million producer interests in the 1942 wheat crop and 173,000 producer interests in the 1942 cotton crop. Final data on the 1942 wheat and cotton sign-up will not be available, however, until reports on acreage seeded have all been submitted.

TABLE 1.—Federal wheat crop insurance experience by years, 1939-41<sup>1</sup>

Crop year	Contracts—				Crop area insured
	Written <sup>2</sup>	In force	Indemnified		
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Percent</i>	<i>Acres</i>
1939.....		165, 775	55, 932	34	7, 234, 913. 3
1940.....	379, 710	360, 496	112, 763	31	12, 755, 367. 8
1941.....	420, 939	371, 468	130, 731	35	11, 736, 427. 4

Crop year	Proportion of allotment insured	Insured production	Premiums	Indemnities	Loss ratio
	<i>Percent</i>	<i>Bushels</i>	<i>Bushels</i>	<i>Bushels</i>	<i>Percent</i>
1939.....	13	60, 836, 719	6, 670, 316	10, 163, 899	1. 52
1940.....	21	108, 282, 202	13, 796, 866	22, 899, 750	1. 66
1941.....	19	104, 327, 465	12, 645, 866	18, 832, 340	1. 49

<sup>1</sup> Experience in the 1942 program not included as data are preliminary and incomplete.

<sup>2</sup> Difference between contracts written and contracts in force represents cancellations, rejections, etc., and no wheat seeded.

Under the 1942 insurance program all units farmed by a producer within a county were listed on one application, but because of excess moisture at seeding time in part of the wheat-producing areas some of the units listed were not planted, or for other reasons they were not eligible for insurance. Therefore, 1942 sign-up figures are subject to downward revision. Table 2 shows participation by States for 1939-41 programs as of June 30, 1942.

TABLE 2.—Federal Wheat Crop Insurance Experience by States and by Years <sup>1</sup>

[As of June 30, 1942]

Branch office and State	Crop year	Contracts—		Crop area insured	Proportion of allotment insured	Production—			Loss ratio	State yield compared to base period average yield <sup>2</sup>	Seeded acreage abandoned <sup>3</sup>
		In force	Indemnified			Insured	Premiums	Indemnities			
		Number	Percent	Acres	Percent	Bushels	Bushels	Bushels	Percent	Percent	Percent
Chicago branch office:											
Illinois.....	1939	12,189	970	267,151.0	15	2,912,114	185,194	58,294	0.31	116	4.4
	1940	14,254	752	230,614.5	13	3,231,693	185,341	36,047	0.17	129	1.1
Indiana.....	1939	32,898	5,549	629,912.2	35	7,047,485	417,567	143,141	1.06	100	3.9
	1940	11,156	2,574	163,667.5	11	2,020,045	141,634	148,728	1.05	110	5.7
Iowa.....	1939	26,884	3,085	332,477.2	21	4,048,436	280,191	123,915	.44	112	1.8
	1940	30,543	1,090	371,772.7	23	4,589,032	301,223	127,312	1.12	137	1.9
Kentucky.....	1939	4,645	1,782	72,593.9	19	894,064	57,223	47,580	2.22	88	13.1
	1940	6,515	705	100,290.2	22	1,228,446	97,553	68,226	7.81	133	5.5
Michigan.....	1939	6,094	5,144	95,207.8	21	1,135,033	88,208	9,691	.66	46	44.7
	1940	945	171	16,465.0	4	168,815	14,692	9,999	.11	99	15.0
Ohio.....	1939	605	29	10,978.3	3	112,610	8,939	39,481	1.20	126	15.0
	1940	15,173	1,536	43,232.6	7	739,654	30,633	57,965	1.67	101	3.5
Tennessee.....	1939	13,213	2,115	134,228.5	18	1,901,231	86,846	83,523	1.00	115	6
	1940	10,252	1,908	123,478.2	16	1,737,408	131,228	101,184	.77	107	1.3
Texas.....	1939	27,668	2,418	314,140.0	17	4,230,813	304,725	77,453	.25	109	6.5
	1940	31,258	3,221	349,597.2	19	4,806,489	289,770	110,628	.38	125	3.0
Kansas City branch office:	1939	238	34	4,773.4	1	43,858	2,747	1,383	.50	115	4.9
	1940	188	18	3,069.0	1	26,223	1,618	473	.29	126	6.7
Arkansas.....											
Colorado.....	1939	38	17	735.2	1	7,582	352	1,445	4.11	101	14.3
	1940	1,429	761	70,532.9	5	580,273	78,215	187,556	2.40	86	29.8
Kansas.....	1939	3,491	1,958	155,890.4	11	1,221,228	247,776	465,490	1.88	95	26.6
	1940	4,976	1,759	209,974.9	14	1,561,018	353,396	103,427	.29	174	11.5
Missouri.....	1939	14,887	5,742	882,738.8	8	7,328,341	777,080	1,746,943	2.25	81	30.1
	1940	58,398	25,003	3,070,590.2	21	23,893,650	3,694,182	8,298,987	2.25	98	29.3
Nebraska.....	1939	53,991	20,867	2,679,151.0	24	19,814,409	2,795,477	7,795,477	.91	127	9.9
	1940	15,735	2,837	343,075.1	20	3,294,200	197,328	171,203	.87	113	6.0
Nebraska.....	1939	20,116	2,975	365,465.2	19	3,500,111	244,478	140,093	.58	130	4.9
	1940	20,883	13,549	384,597.4	20	3,757,216	267,819	1,639,770	6.12	70	28.0
Nebraska.....	1939	13,197	8,710	427,020.7	14	3,922,956	495,556	1,277,596	2.58	72	19.6
	1940	53,924	31,102	1,391,225.4	39	13,162,288	1,972,888	5,130,595	2.60	83	19.9
Nebraska.....	1939	57,272	44,360	1,504,081.8	42	13,519,901	2,308,893	7,080,122	2.99	82	33.0



	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938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TABLE 2.—Federal Wheat Crop Insurance Experience by States and by Years<sup>1</sup>—Continued

[As of June 30, 1942]

Branch office and State	Crop year	Contracts—		Crop area insured	Proportion of allotment insured	Production—			Loss ratio	State yield compared to base period average yield <sup>2</sup>	Seeded acreage abandoned <sup>3</sup>
		In force	Indemnified			Insured	Premiums	Indemnities			
		Number	Number	Percent	Acres	Percent	Bushels	Bushels	Percent	Percent	Percent
Richmond, Va., branch office: <sup>4</sup>											
Delaware	1939	79	14	18	1,765.9	3	22,208	859	0.78	98	4.0
	1940	451	83	18	8,889.5	12	102,221	4,209	1.49	104	2.9
	1941	584	69	12	11,351.7	15	128,524	5,262	1.49	104	2.9
	1939	985	151	15	22,967.1	7	290,905	10,905	.65	111	4.4
Maryland	1940	1,256	160	13	32,752.5	9	410,802	15,061	.66	98	4.8
	1941	1,690	152	9	39,252.1	10	499,900	18,262	.53	96	4.0
New Jersey	1939	29	3	10	380.3	1	5,778	90	.89	79	25.7
	1940	109	4	4	1,206.3	2	17,953	594	1.44	83	23.6
	1941	155	23	15	1,902.7	3	30,749	959	1.35	80	23.6
New York	1939	652	58	9	8,796.2	4	149,854	5,038	1.04	109	1.8
	1940	878	42	5	9,192.0	4	132,649	5,858	1.37	119	3.1
	1941	965	157	16	10,804.9	5	171,849	7,084	1.28	103	3.0
North Carolina	1939	197	23	12	1,952.3	.5	19,413	930	.39	125	7.1
	1940	447	39	9	5,472.6	1	59,369	1,320	.52	127	6.3
	1941	2,299	152	7	30,448.5	4	448,933	15,820	.49	107	2.9
Pennsylvania	1940	5,788	667	12	68,372.3	8	979,386	36,141	.85	102	3.0
	1941	7,173	1,182	16	83,159.0	10	1,234,562	44,513	1.30	99	2.9
Virginia	1939	916	78	9	15,362.2	3	189,239	7,363	.52	95	4.5
	1940	1,104	125	11	19,979.9	4	243,064	9,508	1.51	99	6.9
	1941	2,481	467	19	42,581.4	8	519,461	20,536	1.00	81	8.8
West Virginia	1939	1	0	0	37.0	0+	402	18	0	81	7.6
	1940	88	15	17	1,415.6	1	16,846	892	1.01	83	19.2

<sup>1</sup> Experience for the 1942 program not included as data are preliminary and incomplete.<sup>2</sup> U. S. Department of Agriculture Crop Estimate annual area yields divided by weighted average of 1942 county check yields. This figure rather than the actual yield has been placed in the table to show the relative size of the crop.<sup>3</sup> U. S. Department of Agriculture Crop Estimate data.<sup>4</sup> Richmond office discontinued and business transferred to Chicago office, May 1942.

The insured interests in the 1942 wheat and cotton crops are scattered throughout 2,500 counties in 42 States. For 6 of the southeastern States this was the first experience in insuring growing crops. These States are Louisiana, Mississippi, Alabama, Georgia, South Carolina, and Florida.

### COTTON CROP INSURANCE IN 1942

#### WHEAT INSURANCE PATTERN FOLLOWED

Operation of the 1942 cotton insurance program has followed the general pattern established for the wheat insurance program insofar as the character of the two commodities permits. Both wheat and cotton are insured on a yield rather than an income basis. Both crops are insured against unavoidable hazards. Neither crop is insured against damage to quality or against carelessness of the producer. Coverage is for either 50 percent or 75 percent of a farm's average yield. Any wheat or cotton grower must insure all or none of the different crop interests he may have in a given county. The cost of insurance on either crop is based on the risk of growing it. Growers pledge payment of premiums by signing a non-interest-bearing commodity note which can be paid either in the commodity or the cash equivalent thereof. Nearly all premiums are, however, paid by deduction from any indemnity payment due the insured, from any commodity loan, or any payment due under the agricultural conservation program. Application for insurance on either crop must be made before planting or established closing dates, whichever is earlier. Losses are paid with a certificate of indemnity, which certificate the Corporation will convert into cash upon request, or the grower may use his certificate of indemnity to obtain a loan from the Commodity Credit Corporation for the amount of the commodity represented by the certificate. Both the wheat and cotton insurance programs are administered among farmers by county and community committeemen of the Agricultural Adjustment Agency.

Because of the inherent differences in the character of the two crops some variations were necessary in operating procedures. The fact that cotton is a cultivated crop, and subject to more human hazards than wheat, makes the adjustment of losses a more delicate problem for county committees. Moreover, insect hazards are greater in cotton than they normally are in wheat. Since insect damage is reasonably susceptible to human control, the cotton-loss-adjustment problem becomes somewhat more complex. No insurmountable difficulties are foreseen, however, and it is believed that all adjustment problems can be handled satisfactorily by county committees and the adjusters selected by them. To assure uniformity of practice between counties, it is an established procedure for a representative of the State office to assist in adjusting the first losses reported in each county.

#### COTTONSEED LOSSES INSURED

In order to offer cotton growers protection comparable to that offered to wheat growers it was necessary to provide insurance against average losses of cottonseed as well as of lint. Farm data were not available for developing an actuarial basis for cottonseed insurance, so it was necessary to offer protection against seed losses in terms of lint. This was done under the 1942 program by increasing lint pre-

miums and indemnities by 19 percent, which represented the average relation between lint and seed returns for the period that was used to establish the actuarial basis for cotton crop insurance.

#### RATES DIFFER FOR FRACTIONAL PARTS OF FARM

Actuarial studies on wheat and actual experience in the wheat insurance program show that the probability of paying losses is greater on small acreages than on large acreages for the obvious reason that a better-than-average yield on one part of a farm frequently offsets any loss that may occur on another. Since, in the cotton-growing business, it is characteristic for many tracts to be operated separately within a farm, it seemed logical in the 1942 cotton program to require that the aggregate of premium rates for fractional parts of a farm should usually be higher than the average rate for an entire farm.

#### CASH EQUIVALENT ON AREA BASIS

The cash-equivalent price for cotton is determined on an area basis rather than on a county basis as is the case in the wheat program. This is feasible for cotton because, as compared to wheat, the freight and handling charges for this commodity represent a small percentage of its value. For economy it is expected that for the 1942 program not more than four designated spot markets will be used in establishing cotton cash equivalents; namely, Augusta, Ga.; Memphis, Tenn.; New Orleans, La.; and New Bedford, Mass.

#### LIMITATION ON TRANSFER OF INTEREST

When an insured wheat or cotton crop is transferred from one person to another after the crop is planted, the new owner automatically becomes the holder of the insurance contract. With respect to wheat, such a transfer might take place up until the time of loss or threshing but for cotton no transfer of the insurance will be recognized after the time of loss or after picking of the crop has commenced. This limitation on the right to transfer cotton insurance was considered necessary because of the difficulty which might result in collecting notes where, for example, the crop is picked once, transferred, picked again, and then salvaged on a share basis.

#### INSURANCE PERIOD

The insurance period under the 1942 cotton insurance program extends from the time of planting until the crop is weighed in at the gin or is otherwise disposed of, but not later than January 21, 1943; for the 1942 wheat program the insurance period ran from the time the crop was seeded until threshing, or where field-sacked, 5 days after threshing, but in no event later than October 31, 1942. Prior to 1942 the wheat insurance period terminated on September 30 of the current crop year.

The insurance contract stipulates, however, that the period of insurance may be extended by the Corporation if conditions warrant such action. Continuous rains during the 1941 spring wheat harvest made it necessary to extend the insurance period to November 30, 1941, in Minnesota, North Dakota, Montana, Washington, Oregon, Idaho, and Utah. This permitted completion of harvest and made more accurate adjustment of losses possible.



## COTTON INSURANCE ADMINISTRATION

Immediately upon extension of crop insurance to cotton on June 21 1941, the Corporation made plans to give practical application to the results of cotton-insurance research which it had carried on for several years in collaboration with the Bureau of Agricultural Economics. Two branch offices were set up, one at Dallas, Tex., to service Illinois and all cotton States west of the Mississippi River, and one at Birmingham, Ala., for all cotton States east of the Mississippi, except Illinois. Managers to head these offices were appointed immediately, and they began the task of selecting personnel and facilities necessary to approving cotton insurance yields and rates, auditing premium payments, approving claims, and disbursing indemnity payments.

Employees assigned to the cotton branch offices went through a period of intensive training prior to starting work on the new cotton program. This training consisted of formal classroom type of instruction in the historical background of crop insurance, explanation of procedures as they have applied to wheat insurance and were intended to apply to cotton, and a study of the ways in which the crop insurance program fitted in as a part of the national farm program. Following this training these prospective cotton branch office employees were divided into groups and sent to various wheat branch offices for practical experience in the type of work they would later be expected to do.

The personnel of the four Agricultural Adjustment Agency regions in which cotton is grown assumed a large part of the responsibility for administering the cotton insurance program in the field, this arrangement being similar in every way to that used in handling insurance on wheat. The crop insurance program was carried out through the established regional, State, county, and community AAA officials in order to make it an integral part of the general farm program.

State crop insurance supervisors were selected in the main cotton-producing States to devote all or most of their time to the cotton insurance program. These supervisors were appointed by the regional directors of the AAA with the approval of the Manager of the Federal Crop Insurance Corporation. In certain States where cotton was of minor importance a member of the State committee, or in States where the wheat program was in operation, the regular wheat insurance supervisor, usually assumed the duties of a State cotton insurance supervisor.

### PRESENTING THE PROGRAM TO FARMERS

The cotton crop insurance program was officially launched on January 5, 1942, at a national meeting at Memphis, Tenn. Following this meeting a series of State meetings were held to acquaint State AAA workers and others interested in the details of crop insurance as it applied to their respective areas. District, county, and community educational meetings were scheduled in due course to familiarize local farmers with the purposes and advantages of all-risk crop insurance.

Putting the crop insurance program into effect on farms involves four distinct phases of work: (1) Establishing yields and rates for all farms; (2) writing the insurance; (3) measuring seeded acreage on insured farms; and (4) adjusting and settling losses.

As soon as the lint cotton-insurance per acre and the premium rate

per acre were approved for farms in any given county, such data were sent by the county committee to all persons who had an interest in the 1942 cotton crop as owner or operator. In all, approximately 1,570,000 such statements, representing as many cotton-allotment farms, were sent out. In several short paragraphs this statement included a brief summary of the program, how and where to apply for insurance, the final date for acceptance of applications in the particular county, and the fact that each grower had a 15-day period in which to appeal the yield or rate as established for his farm.

As a follow-up to the official announcement of the cotton program and to achieve economy and efficiency in answering the questions thousands of cotton producers were asking about the new all-risk insurance plan, a question-and-answer leaflet was prepared and distributed to the 19 cotton States in quantities requested. One poster and several other pieces of educational material designed for direct-mail use were made available to meet the demand for information about the program.

Although a farm-to-farm canvass by crop insurance field workers has proved to be the most effective way to present the program to farmers, other presentation media are being used more heavily for the duration because of the shortages of rubber, fuel, and farm help.

#### ESTABLISHING 1942 COTTON YIELDS AND RATES

Actuarial studies based on 70,000 sample farms in more than 900 cotton-growing counties were well under way before insurance on cotton was authorized. The length of the base period, however, remained to be determined. Also there remained the development of procedure for establishing average yields and premium rates for about  $1\frac{1}{2}$  million farms which were eligible for cotton insurance. Average yields and premium rates for all farms had to be established before the sign-up period could begin. These data had to be computed from records on file in the county offices or appraised. Coupled with work connected with the war effort, this was such a gigantic task for county offices to handle that by the time computations were completed and notices sent to growers, only a week or two remained in some areas in which to sell insurance.

Reliable yield data, available for less than half of all cotton farms for as many as 5 of the 7 years, 1934-40, were used in computing individual farm yields and premium rates. As in the early part of the wheat program, on those farms for which adequate and reliable data were not available, yields and rates had to be appraised. Such appraisals were based on the yield and loss history for similar farms. After thus establishing average yields and rates for all farms within a county, an adjustment factor was applied to raise or lower, if necessary, all individual farm data so that the weighted average of the figures finally established would meet county control figures established by the Corporation and known as county check yields and county check premium rates. While the computations for individual farms were limited to the 7-year period, 1934-40, the county check yields which determined the level of the final-yield figures were in many instances based on the average yield for another period considered to be more representative.

## 1943 COTTON YIELDS AND RATES

The same basic method of setting up yields and rates for the 1942 cotton program will be used again in 1943. The data will be simpler to develop, however, and should more accurately reflect the long-time farm record because an additional year of crop history will be blended into the 1942 figures. Average yields and rates for farms, as established for the 1942 program, will be used, after necessary revisions, as the principal basis for determining yields and premium rates for 1943. Since actual 1941 yield data are available for virtually all cotton farms, these data will be incorporated into the new farm yields and rates.

## WHEAT CROP INSURANCE IN 1942

At the beginning of the fiscal year 1942 the Corporation had begun settling losses on the third and was ready to write new insurance contracts on the fourth successive wheat crop. Each year's experience has shown where improvements should be made. The year-to-year changes that have accordingly been effected have stood on their respective merits in contributing toward simpler administration, greater economy, a better actuarial structure, and in general, toward more complete fulfillment of the objective of alleviating the effects of disastrous crop failure.

## THE COMMODITY-NOTE PLAN

The use for the first time of a non-interest-bearing commodity note for premium payments was the most important change made in the 1942 insurance program. Authority to accept notes in payment of premiums was given concurrent with the act approved June 21, 1941, which extended crop insurance to cotton. The change will effect savings of well over a million dollars through a decrease in storage and handling costs of wheat and cotton reserves. These commodity notes rather than the actual commodity make up the reserve during the growing season. After maturity of the note, which is about harvest time, the actual commodity is purchased in an amount equal to commitments under outstanding certificates of indemnity plus estimated certificates of indemnity remaining to be issued.

Maturity dates on these notes, the earliest of which are July 10 and the latest August 29, 1942, approximate the time of harvest. It is too early to report, therefore, on note collections. The insurance contract of which the note is a part, stipulates that if payment is not made at maturity, the amount of the premium will be deducted from (1) any indemnity payable to the insured, (2) any Government payment due the farmer for cooperating in the national farm program, or (3) the proceeds of any commodity loan the farmer may obtain under any loan program administered by the Secretary of Agriculture.

The commodity-note plan enables the insured grower to pay for his insurance out of the harvest of the insured crop and at a cash price per bushel commensurate with the sale value of the crop. Accordingly, whether the cash price is high or low, the cash required for the premium takes the returns from the same number of bushels.

## AVOIDING FARM-TO-FARM SELECTION OF RISKS

Since participation in the program is on a voluntary basis, the tendency of a preponderance of growers to insure only when and where losses are most apt to occur has been one of the Corporation's most



difficult problems. Earlier closing dates for acceptance of applications, and the 3-year term contract (explained more fully on page 115), in effect for the first time for the 1943 wheat program, should help eliminate the in-and-out from year-to-year selectivity. Prior to 1942, however, wheat growers could and in many cases did insure only those acreages within a county on which they believed losses were most apt to occur. This resulted in abnormal losses in relation to premiums collected. So, to make the insurance relationship more equitable, 1942 wheat and cotton contracts require that growers insure their share in all the wheat or cotton acreage in any given county in which they have an interest so that premiums paid where current risk is low will help balance losses on those units where current risk is high.

#### ADJUSTMENT FACTOR APPLIED TO 1942 YIELDS AND RATES

A rather fundamental improvement was made in the 1942 wheat program yield and rate formula through the development of an adjustment factor whereby the cost of insurance was brought more closely in line with the potential risk. Under the 1940 and 1941 programs the rate for the farm was modified by the loss for the farm without regard to the change in coverage resulting in the change in average yield. If there was no loss, the rate dropped. If there was a loss, the rate increased. If the crop yield was high, the average yield for the farm increased while the rate decreased. If the crop yield was low, the average yield for the farm was decreased while the rate increased.

For the 1942 program the rate formula was changed so that it was affected not only by current losses but also by the change in potential losses due to the change in the coverage per acre resulting from a difference in the average yield. Thus the decrease in rate due to the fact that no loss had occurred might be offset in part or even counterbalanced by the increase in coverage due to a higher average yield. Correspondingly, an increase in rate due to a loss would be in part offset by the decrease in potential risk from reduced coverage for the subsequent year.

#### OTHER 1942 PROGRAM REFINEMENTS

Other noteworthy refinements in the 1942 program are as follows:

(1) Prior to the 1942 program an insured grower who transferred his interest in a wheat crop to another person was required to execute a formal transfer of the insurance contract to the new owner. Failure to do so in the prescribed time and manner created some confusion in collecting the premium or settling any loss. Under the 1942 wheat and cotton insurance contracts the insurance automatically transfers with any transfer of interest in the crop. Under such a transfer the premium is usually collected from the transferee, but in the event of his failure to pay the premium, collection may be made from the transferor. This lessens administrative detail and simplifies the problem as to whom any indemnity should be paid because the Corporation simply makes payment to whoever owns the crop at the time of loss.

(2) All indemnities under the 1942 program are settled by issuance of a certificate of indemnity rather than by offering the grower several options, as in the past. In some instances the selective-option settlement previously used resulted in misunderstanding and dissatisfaction. With his certificate of indemnity the insured can



obtain the cash equivalent of the number of bushels of wheat or pounds of cotton representing his loss, he can use it to obtain a loan from the Commodity Credit Corporation, or he can obtain a warehouse receipt representing the commodity if it is available.

(3) In general, operating procedures have been simplified all along the line to cut to a minimum the administrative and clerical duties in county, State, and branch offices. The number of forms required has been reduced by standardization so that the same forms may be used for both wheat and cotton and from year-to-year. Obviously the chances of obsolescence, particularly of material that must be used in approximately 2,500 counties, have been lessened.

As a result of the adoption of these simplified methods of accomplishing required results, coupled with the extreme necessity of reducing administrative costs during the war, plans were taking shape at the close of the 1942 fiscal year to reduce the number of wheat branch offices from four to two. The reduction will be made by closing the Spokane, Minneapolis, and Kansas City branch offices and opening a new one at Denver, Colo., to serve all States from North Dakota to Texas and west. The existing Chicago office will serve all wheat-producing States from Minnesota to Arkansas and east. The work of the Richmond, Va., branch office was shifted to Chicago in May 1942. An estimated annual saving of at least \$165,000 will result from this branch-office reorganization.

Reduction in personnel will account for most of the saving that will be effected. Including the personnel hired during the fiscal year 1942 to operate the new cotton insurance program, the total number of employees on the pay roll as of June 30, 1942, was 562 compared with 559 as of June 30, 1941. Both the wheat and cotton insurance programs are thus being administered with only 3 more employees than were required to run the wheat program alone. Despite this small change in total personnel, the turnover during the year was extremely heavy. Replacements had to be effected for 31 men who enlisted or were drafted for the armed forces, 91 who transferred to other Government agencies, mostly war agencies, and 162 employees who left the Corporation to enter private business or for other reasons.

### SUMMARY OF LOSS EXPERIENCE

As should normally be expected, the Corporation has relied very heavily on its loss experience to indicate basic improvements needed in the insurance structure. Careful analysis of losses above expectancy usually discloses their cause and suggests the remedy, whether it be administrative correction or safeguards against abnormal crop conditions. Gratifying progress, we feel, has been made along these lines each year and while there has not been and perhaps will never be any need for material departure from the original crop insurance plan, refinements ought to be made as experience proves the need for them.

#### 1939 CROP YEAR <sup>1</sup>

Indemnities paid in 1939 exceeded premium collections by a little more than 50 percent although premiums exceeded indemnities in 12 of the 31 States in which insurance was written that year. The

<sup>1</sup> See table 2 for complete statistical summary for the 1939-41 crop insurance programs.

greatest single factor contributing to 1939 losses was drought in the hard winter wheat area. Losses from this cause were increased by adverse selection of risks resulting from the fact that it was necessary to permit wheat growers to complete their contract by paying premiums after the crop was planted. Under the circumstances this was something that could not be prevented because the tremendous job of determining individual farm yields and rates made it impossible to tell the insurance prospect how much he owed until after seeding and in some instances after the prospects of a crop were reasonably determinable. If prospects were favorable, growers declined to pay the premium; if prospects were poor, they paid the premium.

## 1940 CROP YEAR

To help prevent a recurrence of the adverse 1939 experience, the 1940 contract required premiums to be paid, or their payment authorized from agricultural conservation program advances, before any wheat was seeded on the farm. Also, check yields and premium rates were established for all counties which, in a great majority of cases, resulted in an increased rate.

As much as 2 months before it was time to seed the 1940 winter wheat crop, the worst drought in 50 years, if not the worst on record, scorched the southern Great Plains. Farmers in the area knew that the Federal crop insurance program was designed to alleviate the effects of crop failure and they also knew that crop failure was fairly imminent when such drought conditions existed prior to or at seeding time. A heavy sign-up naturally resulted. Insurance did not attach unless wheat was seeded which meant that many farmers seeded under adverse conditions, a practice that was common among both uninsured and insured wheat growers. Drought losses caused indemnity payments that year to exceed premiums by 66 percent although 20 of the 33 States in which the Corporation did business in 1940 added more to the reserve than they took out. Table 3 gives a more complete picture of the causes of loss to the 1940 wheat crop. Similar data on the 1941 and succeeding crop years will be prepared as soon as time permits an abstract of pertaining reports to be made.

TABLE 3.—*Indemnified losses caused by various hazards on insured 1940 wheat crops*

Branch office and State	Drought	Winter-kill	Excessive moisture	Hail	Rust	Flood	Hot winds	Blow-out	Frost
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Chicago:									
Illinois.....	45	11	4	-----	10	6	-----	-----	-----
Indiana.....	16	13	7	-----	34	16	-----	-----	-----
Iowa.....	28	-----	-----	-----	12	6	-----	-----	-----
Kentucky.....	47	12	7	-----	-----	31	-----	-----	-----
Michigan.....	15	30	29	4	10	6	-----	-----	-----
Ohio.....	22	22	24	-----	-----	10	-----	-----	-----
Tennessee.....	8	71	6	-----	-----	-----	-----	-----	-----
Kansas City:									
Colorado.....	66	4	-----	12	-----	-----	-----	7	-----
Kansas.....	80	3	-----	-----	2	-----	-----	7	-----
Missouri.....	42	10	-----	-----	20	-----	-----	-----	-----
Nebraska.....	90	-----	-----	4	-----	-----	-----	-----	-----
New Mexico.....	40	-----	-----	3	-----	-----	-----	29	-----
Oklahoma.....	62	12	-----	-----	6	-----	-----	10	-----
Texas.....	71	-----	-----	3	-----	-----	-----	18	-----

TABLE 3.—*Indemnified losses caused by various hazards on insured 1940 wheat crops—Continued*

Branch office and State	Drought	Winter-kill	Excessive moisture	Hail	Rust	Flood	Hot winds	Blow-out	Frost
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Minneapolis:									
Minnesota	55	3	3	18					5
Montana	44			29					
North Dakota	79			9					4
South Dakota	80			12					
Wisconsin	5	17	5	18	45				
Wyoming	68			13			8		6
Spokane:									
California			19		54	20			
Idaho	47		9	8	4		14		
Nevada	8			7	75				
Oregon	64		6	3			10		
Utah	84		4						
Washington	67			9			4		
Richmond, Va.:									
Delaware	14		39	9	16				
Maryland	3	22	10						
New Jersey		15	61						
New York	7	46	19			22			
North Carolina	47	16			9				22
Pennsylvania	7	57	9			3			
Virginia		15	25	27		10			8
United States	75.5	2.3	.9	3.9	3.0	.7	.3	4.6	.5

  

Branch office and State	Grass-hoppers	Chinch bugs	Hessian fly	Cut worm	Smut	Scab	Miscellaneous	Total loss
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Bushels</i>
Chicago:								
Illinois		12	3				9	36,047
Indiana						9	5	123,915
Iowa		50					4	47,580
Kentucky							3	9,691
Michigan							6	57,965
Ohio						13	9	77,453
Tennessee							15	1,383
Kansas City:								
Colorado							11	465,490
Kansas							8	8,298,987
Missouri		22					6	140,693
Nebraska				22			6	5,130,595
New Mexico							6	21,487
Oklahoma							10	1,277,841
Texas							8	1,649,525
Minneapolis:								
Minnesota	6						10	128,054
Montana	20						7	367,278
North Dakota	4						4	2,039,857
South Dakota	4						4	1,618,221
Wisconsin							10	3,109
Wyoming							5	271,458
Spokane:								
California							7	624,875
Idaho							18	99,899
Nevada	3						7	5,469
Oregon	17							146,798
Utah							12	15,201
Washington							20	186,261
Richmond, Va.:								
Delaware						12	10	6,269
Maryland			8			43	14	9,977
New Jersey					24			264
New York							6	2,153
North Carolina					6			362
Pennsylvania			13				11	30,725
Virginia						9	6	4,868
United States	1.1	.3	(2)	(2)	(2)	.1	7.1	22,899,750

1 Discontinued and business transferred to the Chicago office May 1942.

2 Less than 0.1 percent.



## 1941 CROP YEAR

Uniform closing dates for acceptance of applications in county offices were set for the 1941 program in an effort to reduce losses from adverse-risk selectivity. The final dates, August 31 for winter wheat and February 28 for spring wheat, were from 2 weeks to a month earlier than closing dates under the 1940 program. Also, new yields and rates were computed for 1941, bringing into the actuarial base the actual production data of 1939 which tended to increase premium rates, particularly where high losses had occurred.

By the time applications were being written on the 1941 winter wheat crop, the drought area had shifted from the high-risk southern Great Plains area to the relatively low-risk area just north and east of it. The result was that participation increased substantially where soil moisture and premiums were low, and decreased materially where premiums and seasonal precipitation were high. Although drought conditions disappeared in the fall of 1941, millions of acres of wheat started the winter in a weakened condition—too weak to withstand the worst November freeze that ever hit that part of the country. Thus, extremely abnormal winter-kill damage in some of the winter wheat area, coupled with local but severe wind and drought damage in Oklahoma and Texas, flood and rust losses in California, and excessive rainfall at harvest time in several important wheat areas, caused 1941 indemnity payments to exceed premium collections by nearly 40 percent. Nevertheless, premium collections exceeded indemnity payments in 18 of the 35 States in which insurance was written that year.

## 1942 CROP YEAR

Two important features added to the 1942 program were (1) the requirement that growers insure all crop interests within a given county to avoid adverse farm-to-farm selection of risks (see page 109), and (2) the use of an adjustment factor in the yield and rate formula which brought premium rates more closely in line with the potential risk (see page 110). Also, base-period data were strengthened by the addition of actual 1940 production figures.

With the 1942 harvest now well under way it appears that the year's premium collections will show a favorable balance against indemnities. As of early August the Corporation had settled 1942 losses totaling 2,977,000 bushels as compared with 7,351,000 bushels for the same date under the 1941 program. If losses from early August until the completion of harvest are similar to those which occurred in 1941, the Corporation estimates total 1942 indemnities at about 8½ million bushels.

Although there has been no widespread destruction by any one hazard this year, some heavy losses have been caused by too much rain and flooding in Missouri, Illinois, south-central Indiana, eastern Kansas, eastern Oklahoma, and California. Some counties in southwest Oklahoma and a larger area in north-central Texas have suffered heavy loss from green bugs. Hail has caused above-average losses in scattered localities of the western half of the United States. Losses from drought and winter-kill have been below normal so far.



## WHEAT INSURANCE FOR 1943

## THREE-YEAR TERM CONTRACT

Soil-moisture conditions at the time of seeding are an important factor in the major wheat areas in indicating the prospects of a crop. This information, available to the farmers well in advance of the seeding date and usually before the closing date for submitting applications, has quite naturally been used in deciding whether or not to buy all-risk insurance. As long as insurance was offered on a 1-year basis, a higher percentage of growers could be expected to insure where crop prospects were unfavorable than where conditions looked good.

The first 3 years of insurance experience proved quite conclusively that a preventive for year-to-year selectivity was imperative. Several alternatives were considered; namely, (1) an automatic insurance plan whereby all growers who participated in the national farm program would be insured, (2) still earlier closing dates for acceptance of applications—possibly as far as 6 months before planting time, and (3) a term-insurance plan.

A thorough study was made of this problem, both by the Corporation and by a committee of three insurance experts independent of the Corporation. In addition, AAA committeemen from every wheat-producing State were given an opportunity to express their recommendations, which resulted in a general meeting of the minds that the most practical solution would be to write wheat-crop insurance on a long-term basis. Accordingly, a 3-year contract was offered to wheat growers about the middle of June 1942 to cover the wheat crops for harvest in 1943, 1944, and 1945. Early apprehension about possible unpopularity of term insurance among farmers has been largely dispelled. In fact, current unofficial reports give assurance that the term contract is more popular in some States than the 1-year contract ever was. Term insurance on cotton is being considered, but the need for it seems less urgent inasmuch as cotton crop prospects based on preseedling conditions are less predictable than on wheat; hence, there is less danger of year-to-year selectivity.

In developing the 3-year wheat insurance contract the Corporation was mindful of the need for flexibility to meet contingencies or circumstances that might arise during a 3-year period and made the following provisions: (1) The contract is subject to all amendments that may be made from year to year and any legislation Congress may enact pertaining to the Crop Insurance Act, including appropriation statutes; (2) the insured may cancel the third year of insurance by giving his county committee written notice on or before the closing date for accepting applications for the second crop year under the contract; (3) the yield and rate as established for each production unit insured for the first year shall remain constant for the term of the contract; (4) the insured may, at the beginning of any crop year, enter into a new 3-year contract if changes in the program make it desirable for him to do so; (5) any wheat-crop interests acquired by an insured grower after the first year of the 3-year term will be insured on the yield and rate basis that would have applied had he insured it under his original contract, provided he acquires such interests before the wheat is planted.

Premiums are paid under the 3-year contract with a non-interest-

bearing commodity note. It provides for three annual installment payments, each installment coming due at a date which approximates harvest time in the various States and representing the total premium for the number of acres seeded during the current year. Any payments made on the note at or before maturity may be made with a warehouse receipt representing salable wheat, or in the cash equivalent. Any payments made after maturity must be made in cash equivalent only.

The cash equivalent of any premium installment is determined by multiplying the number of bushels of wheat of the specified class and grade by the cash equivalent price per bushel for the day the installment is due, or if paid before the due date, the price for the day the installment is actually paid.

#### REDUCED-PREMIUM PLAN

It is a common practice among commercial insurance companies to pay dividends, allow refunds, or reduce premiums for subsequent years if the insured suffers no loss under his policy or contract. A plan has been developed for applying this principle to the 1943 and succeeding insured wheat crops. Moreover, it will give recognition to growers who can demonstrate their ability to produce without losses, and this in turn should encourage continuous participation on farms where few losses have been paid.

In general, the reduced-premium plan provides that if, after a period of *consecutively* insured wheat crops, the aggregate of premiums paid by the insured, less indemnities collected by him during the same period, equals or exceeds the insured production for 1943 or any subsequent year, the annual premium may be reduced by 50 percent. Because of the importance of personal ability in producing crops, and in fairness to tenants and owners who shift their operations from farm to farm, eligibility for reduction in premium will be determined on a personal-experience basis, rather than on a farm basis.

Table 4 shows how the plan will operate in its simplest form on a hypothetical farm. Here, farm X has been insured for 4 consecutive years. A 45-bushel loss occurred in 1940, which makes the accumulated balance of premiums over indemnities at the end of the 4 years amount to 525 bushels. Assuming that the insured production for 1943 is 500 bushels or some figure less than the accumulated balance, the premium for farm X will be reduced by 50 percent.

TABLE 4.—Operation of the reduced premium plan on farm X

Crop year	Insured produc- tion	Premium	Indem- nity	Accum- ulated bal- ance
	<i>Bushels</i>	<i>Bushels</i>	<i>Bushels</i>	<i>Bushels</i>
1939.....	490	135	0	135
1940.....	510	145	45	235
1941.....	500	140	0	375
1942.....	520	150	0	525
1943.....	500	75	-----	-----

Various factors, such as increased or decreased acreages, changes in farming practices, degree of interest in crops, etc., will be considered where such factors apply. Methods for modifying the plan to fit such

cases have been developed. To avoid placing a farmer who has carried insurance continuously at a disadvantage compared with the farmer who may apply for the first time, it has been provided that the accumulated balance shall never drop below zero.

#### PREMIUM-RATE SCHEDULES

Constant search for a better way to establish premium rates for all farms in each county has resulted in a plan whereby, in a great majority of counties, one schedule of rates can be used rather than a rate on each individual farm.

In operation this county-wide rate plan requires the classifying of all farms within a county into yield groups based on data from the previous years' listing sheet. For example, all farms with a yield from 8.0 to 8.9 bushels are placed in one group; from 9.0 to 9.9 bushels in the next group, etc. The premium-rate schedule is then developed by the process of finding the simple average of premium rates for each yield group in the county, which in an average county means that all farms in each yield group will have the same premium rate.

Provision is also made for upward adjustment of rates for particularly high-risk farms to prevent "bargain" insurance. In some counties, however, where farms fall into two or more distinctly different risk groups, but which have yields that would fall into the same yield group on the premium-rate schedule, it has been necessary to provide more than one schedule of rates—one for each risk group.

The plan described was used in establishing rates for the 1943 wheat program. Its objective was to prevent accidental crop losses from causing differences in rates between farms of similar yields. It is more economical and simpler than the original plan and is better understood by growers who want to know how their insurance cost was established.

#### VARIED CLOSING DATES

With term insurance a reality, the Corporation felt it would be mutually advantageous to depart from the rule of uniform closing dates for acceptance of applications in county offices. Rather than have all winter wheat or spring wheat States complete their sign-up at a uniform early date, the term contract provides closing dates that are in step with the season, which permits more time to present the program in some States without changing the possibilities of adverse selection of risks. Regardless of closing dates, however, insurance will not be written on any crop after it is planted.

The final date set for accepting winter wheat applications for the 1943 program was August 31, 1942, the same as last year, for Arizona, Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Wisconsin, and Wyoming; September 15 for Delaware, Kentucky, Maryland, Michigan, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia; September 30 for California, Idaho, Nevada, Utah, and Washington. The closing date set for all spring wheat insurance applications was March 15, 1943, instead of February 28 as was the case last year.



## COUNTY SURVEY OF CROP INSURANCE

Recognizing the desirability of getting the farmers' point of view about every phase of the crop insurance program and to get first-hand information and suggestions for later analysis as to how the program may be improved, the Corporation conducted a farm survey during the summer of 1941, involving interviews with more than 1,000 farmers and other individuals in 15 counties in 14 of the most important wheat-producing States. The survey was made by men from the Washington office with the approval of, but not in collaboration with, State and county committeemen.

In selecting the counties to be surveyed care was taken to use those that had wide variations in participation, indemnities paid, relation of rates to yields, and the importance of wheat as a source of income. About a month was required to complete the survey in each county and it was purposely timed to take place at the peak of crop insurance administrative activities; in other words, at harvest time when losses were being adjusted and plans for presenting the succeeding years' program were being developed.

The consensus of the reports from all 15 counties has helped to bring about constructive changes in the 1943 program. Aside from many incidental benefits that might be expected to come from interviews with more than 1,000 farmers, these studies are part of the basis of an unbiased study now being made by a committee of 3 professional insurance analysts independent of the Corporation, a comprehensive report on which is in the process of preparation.

## SUMMARY OF DATA OBTAINED

Although this county survey disclosed much information that may or may not have a direct bearing on crop insurance, some observations were made that seem worthy of discussion here.

## SOUNDNESS OF BASE-PERIOD DATA

Some apprehension prevailed generally among farmers about the soundness of data used to establish base-period yields and rates. Different reasons for this were advanced in different localities as follows: (1) Records available for only the better-than-average farms; (2) some farmers reported only wheat actually sold and did not report harvested wheat used for other purposes on the farm; (3) yields of 5 bushels or less not reported because they were used for hay; (4) understatement of yield history by farmers who thought high yields would increase taxes, and overstatement by those who thought high yields would increase Agricultural conservation program payments; (5) records carelessly obtained; and (6) inadequate adjustment for losses of a local nature.

While these allegations may have some basis in fact, the adverse effect, if any, they have had on the crop insurance program is being lessened from year to year by stricter administration and by blending into the base-period data the current production data which are collected specifically for actuarial purposes.



## REPEAT BUSINESS

The number of farmers who have taken insurance every year since the program began was found to be relatively small, although a considerable number were in one year, missed a year, and then came back in again. On the average it is estimated that about 40 percent of each year's business so far represents farmers who took insurance the previous year, although private studies on the subject in other counties showed this percentage to be much higher.

No clear-cut reason for failure to insure continuously could be detected but the following observations are perhaps indicative: (1) Growers are less inclined to insure following a bumper harvest; (2) many growers believe the premium rate too high or the ratio of coverage too small; (3) others say that payments under the Agricultural conservation program are sufficient insurance; (4) in some counties emphasis was placed on obtaining new business and very little effort was made to get repeat business, and (5) some dropping out after 1 year should be attributed to the fact that a few growers who expected but didn't make a "profit" out of their initial insurance investment failed to realize that the program is designed only to "protect" the insured grower against losses below a substantial part of an average yield.

## FACTORS INFLUENCING PARTICIPATION

Undoubtedly the most important factor affecting participation in the 15 counties studied is the attitude of county and community committeemen toward the crop insurance phase of the farm program. In counties where the men administering the Federal Crop Insurance Program were enthusiastic about it and had made an organized effort to explain the program to farmers, high participation was obtained even though yield and premium rates or other factors were relatively unfavorable for selling insurance. In other counties where the attitude regarding administration of the program was indifferent, very little insurance was written despite seeming favorable conditions otherwise. In still other counties, committeemen apparently made a selective effort to sell insurance; that is, they made a special effort to write insurance on high-risk farms. While perhaps in line with the purpose of the program to alleviate the effects of crop failure, this practice was definitely out of line with sound insurance practice. It has been corrected, we believe, by the term contract and by the requirement that all farms a producer may have within a county be insured rather than only those he may select.

## FINANCIAL AND COMMODITY REPORT

Owing to the particular requirements of a yield-insurance program in which insured yields, premiums, and indemnities are computed in terms of the commodity, the insurance reserve, representing premiums less indemnities, and other integrated accounts are expressed in terms of the commodity—bushels for wheat, and pounds for cotton. The insurance reserve thus reflects the actuarial experience; i. e., the relation between premiums and indemnities in terms of the commodity.

For the purpose of making cash settlements, premiums and indemnities are translated into current market prices at the farm. The insured may pay premiums or receive indemnities in the commodity through the medium of warehouse receipts, but the number of this type of transaction is negligible. The monetary values arising from cash transactions are handled in accordance with usual accounting practice. The financial results, consisting of the cash-equivalent values of premiums and indemnities, comprise the operating reserve.

The insurance reserve (commodity) and operating reserve (monetary) are maintained to reflect the results of each crop year separately.

The financial and commodity positions of the Corporation as of June 30, 1942, are reflected in tables 5 to 9.

TABLE 5.—*Comparative balance sheet (monetary) for the fiscal years ending June 30, 1941, and June 30, 1942, as of June 30, 1942*

ASSETS			
Item	Fiscal year ending—		Increase or decrease as of 1942
	June 30, 1941	June 30, 1942	
Cash.....	\$7, 972, 129. 74	\$3, 906, 484. 59	—\$4, 065, 645. 15
Accounts receivable:			
Uncompleted sales of wheat.....	11, 115. 24		—11, 115. 24
Administrative fund.....		255, 005. 10	+255, 005. 10
Other.....	5, 933. 09	24, 803. 75	+18, 870. 66
Total accounts receivable.....	17, 048. 33	279, 808. 85	+262, 760. 52
Notes receivable—premium collections for 1942 crop year (estimated).....		14, 699, 892. 28	+14, 699, 892. 28
Interagency assets: Agricultural Adjustment Administration.....	11, 088. 09		—11, 088. 09
Other assets:			
Wheat inventory (stated at cost value)—			
In store.....	9, 882, 177. 57	9, 698, 253. 94	—183, 923. 63
Purchase commitments.....	68, 612. 50		—68, 612. 50
Total.....	9, 950, 790. 07	9, 698, 253. 94	—252, 536. 13
Less sales commitments.....	11, 115. 24		—11, 115. 24
Net inventory.....	9, 939, 674. 83	9, 698, 253. 94	—241, 420. 89
Total assets.....	17, 939, 940. 99	28, 584, 439. 66	+10, 644, 498. 67
LIABILITIES AND CAPITAL STOCK			
Accounts payable:			
Uncompleted purchases of wheat.....	\$308, 075. 46		—\$308, 075. 46
Administrative fund.....	69, 853. 21		—69, 853. 21
Other.....	170. 08	\$225. 44	+55. 36
Total.....	378, 098. 75	225. 44	—377, 873. 31
Indemnities payable (estimated).....		8, 446, 000. 00	+8, 446, 000. 00
Operating reserve.....	3, 561, 842. 24	138, 214. 22	—3, 423, 628. 02
Total liabilities.....	3, 939, 940. 99	8, 584, 439. 66	+4, 644, 498. 67
Capital stock.....	14, 000, 000. 00	20, 000, 000. 00	+6, 000, 000. 00
Total liabilities and capital stock.....	17, 939, 940. 99	28, 584, 439. 66	+10, 644, 498. 67

TABLE 6.—Comparative balance sheet (wheat) for the fiscal years ending June 30, 1941, and June 30, 1942, as of June 30, 1942

## ASSETS

Item	Fiscal year ending—		Increase or decrease as of 1942
	June 30, 1941	June 30, 1942	
Wheat inventory.....	<i>Bushels</i> 12, 255, 033	<i>Bushels</i> 10, 651, 533	<i>Bushels</i> —1, 603, 500
Notes receivable—premium collections for 1942 crop year (estimated).....		10, 167, 298	+10, 167, 298
Liabilities requiring no inventory coverage:			
Unapplied deposits.....		69	+69
Indemnities payable—1941, uncertified.....		1, 918	+1, 918
Indemnities payable—1941, deferred.....		11, 617	+11, 617
Total.....		13, 604	+13, 604
Excess of wheat-stock requirement over inventory <sup>1</sup> .....		37, 231	+37, 231
Total assets.....	12, 255, 033	20, 869, 666	+8, 614, 633

## LIABILITIES

Deposits for future premiums.....	9, 376	69	—9, 307
Indemnities payable.....	2, 066, 888	11, 601, 383	+9, 534, 495
Insurance reserve.....	—1, 594, 076	—9, 514, 727	—7, 920, 651
Reserve for estimated premium decreases.....	—840, 000		+840, 000
Excess of indemnities over premiums:			
1939 crop year.....	3, 493, 360	3, 493, 583	+223
1940 crop year.....	9, 094, 817	9, 102, 884	+8, 067
1941 crop year.....		6, 186, 474	+6, 186, 474
Excess of wheat inventory over wheat-stock requirement <sup>1</sup> .....	24, 668		—24, 668
Total liabilities.....	12, 255, 033	20, 869, 666	+8, 614, 633

<sup>1</sup> Represents:

Item	Fiscal year ending—		Increase or decrease as of 1942
	June 30, 1941	June 30, 1942	
Premium collections.....	14, 264, 012	332, 702	—13, 931, 310
Deposits for future premiums.....	9, 376		—9, 376
Indemnities approved for deferred settlement on 1940 crop year and unpaid.....	1, 262		—1, 262
Indemnities payable—1941, on Commodity Credit Corporation loan.....		10, 559, 322	+10, 559, 322
Total.....	14, 274, 650	10, 892, 024	—3, 382, 626
Less:			
Indemnities paid.....	1, 204, 285	203, 260	—1, 001, 025
Reserved for estimated premium decreases.....	840, 000		—840, 000
Total.....	2, 044, 285	203, 260	—1, 841, 025
Wheat-stock requirement.....	12, 230, 365	10, 688, 764	—1, 541, 601
Wheat inventory.....	12, 255, 033	10, 651, 533	—1, 603, 500
Excess of wheat inventory over wheat-stock requirement.....	24, 668		—24, 668
Excess of wheat-stock requirement over inventory.....		37, 231	+37, 231

The wheat inventory is usually slightly over or under the wheat-stock requirement because of the short lapse of time between premium and indemnity transactions, and the purchase and sale of wheat.

COMMENTS ON MONETARY AND WHEAT BALANCE SHEETS  
(TABLES 5 AND 6)

## CASH

The cash amounting to \$3,906,484.59 is deposited with the Chief Disbursing Officer of the Treasury Department. The facilities of the Disbursing Office of the Treasury are used by the Corporation for deposits and disbursements.

## ACCOUNTS RECEIVABLE

The amount due from the Administrative Fund (appropriation made available for operating and administrative expenses) in the amount of \$255,005.10 represents wheat warehousing charges paid from the capital fund of the Corporation. This amount is reimbursable by the Administrative Fund.

Other accounts receivable amounting to \$24,803.75 mainly represent indebtedness of insured farmers amounting to \$21,701.25 and a claim of \$3,102.50 resulting from the inability of the warehouseman to deliver wheat to the Corporation as shown by his warehouse receipts.

## NOTES RECEIVABLE

Notes receivable in the amount of \$14,699,892.28 represent the estimated value of commodity notes held by the Corporation for 1942 crop year insurance premiums. This item is subject to adjustment to conform with the actual cash-equivalent prices to be computed on the basis of prices in effect at maturity dates. Established maturity dates for computing the balance due on wheat premiums range from July 10 to August 29, 1942, and for cotton premiums from August 1, 1942, to October 25, 1942.

## WHEAT INVENTORY

As of June 30, 1942, the wheat inventory amounted to 10,651,533 bushels stated at the cost value of \$9,698,253.94.

This wheat was held as a protection against price increases in 1941 crop year outstanding certificates of indemnity, and to cover the 1942 crop year operations represented by premium collections prior to the maturity date of 1942 notes, less 1942 indemnities paid. As indicated in the footnote of table 6, the wheat-stock requirement was 37,231 bushels in excess of the Corporation's inventory, which difference was absorbed in operations subsequent to the close of the fiscal year.

It will also be noted in the footnote of table 6 that the Commodity Credit Corporation is the holder of 1941 outstanding certificates of indemnity, representing 10,559,322 bushels of wheat. These certificates were pledged as collateral for loans with the Commodity Credit Corporation by growers and were unredeemed as of April 30, 1942, the final date set by that Corporation for the redemption of loans.

The liquidation of these outstanding certificates is now in process and will be effected by an exchange of the certificates for warehouse receipts in an equivalent number of bushels. A cash adjustment in favor of the Federal Crop Insurance Corporation will result because of the excess of value of the wheat stocks held at terminal markets as compared with local farm prices upon which the certificates will be evaluated. The prices in effect on May 11, 1942, the agreed settle-



ment date, will govern. An adjustment for warehousing charges will also be involved in the settlement.

No cotton stocks were acquired since only 203 bales (101,520 pounds) were paid in cotton premiums to June 30, 1942.

In order to reduce operating and administrative expenses incident to the acquisition, maintenance, and disposal of commodities, required as price protection, recent arrangements have been made with the Commodity Credit Corporation whereby its facilities shall be utilized by this Corporation to perform these functions. Briefly, the agreement provides that the Commodity Credit Corporation shall, at the direction of the Federal Crop Insurance Corporation, acquire wheat and cotton stocks for the latter Corporation's account at such locations and quantities as specified and at current market prices. Conversely, any stocks so acquired shall be disposed of as directed.

#### ACCOUNTS PAYABLE

Accounts payable amounting to \$225.44 are miscellaneous in character due for the most part to individual growers.

#### INDEMNITIES PAYABLE (ESTIMATED)

Outstanding certificates of indemnity amount to 11,601,383 bushels at an estimated monetary value at the farm of \$8,446,000. Actual cash values of these certificates will be determined at the time of liquidation. Included in the 11,601,383 bushels is an amount of 10,559,322 bushels, represented by 1941 crop year certificates pledged as collateral for loans by growers with the Commodity Credit Corporation. As stated in a preceding portion of this report, these certificates were unredeemed by growers and are now in process of settlement between the Commodity Credit Corporation and the Federal Crop Insurance Corporation.

The balance of the commodity liability represents, for the most part, 1942 crop-year outstanding certificates of indemnity.

#### OPERATING RESERVE

The operating reserve reflects the premiums less indemnities stated in monetary values. This account, amounting to \$138,214.22, is summarized by crop years in table 7.

TABLE 7.—Summary of the relation between premiums, indemnities, and the operating reserve balances for the crop years 1939-42

Crop year	Premiums	Indemnities	Operating reserve
Wheat:			
1939.....	\$3, 411, 019. 43	\$5, 605, 931. 41	—\$2, 194, 911. 98
1940.....	9, 155, 343. 25	13, 826, 726. 51	—4, 671, 383. 26
1941.....	7, 098, 186. 30	13, 940, 203. 26	—6, 842, 016. 96
1942.....	<sup>1</sup> 10, 500, 000. 00	<sup>2</sup> 1, 150, 025. 58	+9, 349, 974. 42
Total wheat.....	30, 164, 548. 98	34, 522, 886. 76	—4, 358, 337. 78
Cotton: 1942.....	<sup>1</sup> 4, 500, 000. 00	( <sup>3</sup> )	+4, 500, 000. 00
Total cotton and wheat.....	34, 664, 548. 98	34, 522, 886. 76	+141, 662. 22
Less other charges.....			—3, 448. 00
Operating reserve.....			+138, 214. 22

<sup>1</sup> Estimated.

<sup>2</sup> Represents the cost of indemnities paid plus the estimated value of outstanding certificates of indemnity to June 30, 1942. The major portion of 1942 indemnities will be approved from July through October 1942.

<sup>3</sup> No claims for cotton losses presented to the Corporation as of June 30, 1942.

## INSURANCE RESERVE

The insurance reserve reflects the premiums, less indemnities, expressed in terms of the commodity. A separate reserve account is carried for each commodity insured.

The wheat insurance reserve operations are summarized by crop years in table 8.

TABLE 8.—*Summary of relation between wheat premiums, indemnities, and insurance reserves for the crop years 1939-42*

Crop year	Premiums	Indemnities	Insurance reserve
	<i>Bushels</i>	<i>Bushels</i>	<i>Bushels</i>
1939 <sup>1</sup> -----	6, 670, 316	10, 163, 899	-3, 493, 583
1940 <sup>1</sup> -----	13, 796, 866	22, 899, 750	-9, 102, 884
1941 <sup>1</sup> -----	12, 645, 866	18, 832, 340	-6, 186, 474
1942 -----	<sup>2</sup> 10, 500, 000	<sup>3</sup> 1, 231, 786	+9, 268, 214
Total -----	43, 613, 048	53, 127, 775	-9, 514, 727

<sup>1</sup> For data by States see table 2.

<sup>2</sup> Estimated. Actual premium figures, in which will be shown the acreage seeded to wheat and the total premiums, will be available when all acreage reports have been received.

<sup>3</sup> Represents the total bushels paid and accrued to June 30, 1942. The major portion of 1942 indemnities will be approved from July through October 1942.

The cotton insurance program has been in operation only for the 1942 crop year.

Although acreage reports on cotton planted were not available for determining the actual premium income, it is estimated that the premiums will amount to about 25 million pounds of cotton or 50,000 bales.

## CAPITAL STOCK

As of June 30, 1942, the Corporation had requisitioned 20 million dollars of the total stock subscribed by the Treasurer of the United States, amounting to 40 million dollars.

## OPERATING AND ADMINISTRATIVE EXPENSES

A comparison of operating and administrative expenses and appropriations for the fiscal years ended June 30, 1941 and 1942 is shown in table 9.

The increase in operating and administrative expenses of \$2,734,062.96 as compared with the 1941 fiscal year is due to the operation of the cotton insurance program which was started in the 1942 fiscal year.

TABLE 9.—*Comparative statement of operating and administrative expenses and appropriation reconciliation for the fiscal years ended June 30, 1941, and June 30, 1942, as of June 30, 1942*

Item	Expenses for the fiscal year ended—		Increase or decrease as of 1942
	June 30, 1941	June 30, 1942	
Direct expenses except wheat storage:			
Personal services.....	\$947, 480. 07	\$1, 149, 863. 62	+ \$202, 383. 55
Travel .....	54, 164. 27	100, 845. 20	+46, 680. 93
Transportation of things.....	11, 412. 98	30, 329. 49	+18, 916. 51
Communication service.....	18, 697. 06	22, 541. 93	+3, 844. 87
Rents and utility services.....	45, 971. 60	52, 538. 01	+6, 566. 41
Printing and binding.....		74, 237. 64	+74, 237. 64
Other contractual services.....	18, 301. 25	51, 123. 40	+32, 822. 15
Supplies and materials.....	38, 456. 03	108, 212. 49	+69, 756. 46
Total direct expense except wheat storage.....	1, 134, 483. 26	1, 589, 691. 78	+455, 208. 52
Wheat storage.....	933, 113. 75	716, 974. 91	—216, 138. 84
Total direct expense.....	2, 067, 597. 01	2, 306, 666. 69	+239, 069. 68
Expenses of cooperating agencies:			
Office of the Secretary.....	40, 937. 00	67, 410. 00	+26, 473. 00
Bureau of Agricultural Economics.....	82, 100. 00	81, 207. 00	—893. 00
Office of Information.....	4, 772. 00	9, 800. 00	+5, 028. 00
Office of the Solicitor.....	45, 922. 00	45, 922. 00	
Agricultural Marketing Administration.....	21, 605. 00	26, 375. 00	+4, 770. 00
Agricultural Adjustment Administration.....	2, 892, 640. 00	5, 314, 859. 00	+2, 422, 219. 00
Library, Department of Agriculture.....		840. 00	+840. 00
Division of Disbursements—Treasury Department.....	12, 000. 00	11, 196. 00	—804. 00
Total expenses of cooperating agencies.....	3, 099, 976. 00	5, 557, 609. 00	+2, 457, 633. 00
Total expenses.....	5, 167, 573. 01	7, 864, 275. 69	+2, 696, 702. 68
Equipment purchased.....	18, 070. 71	55, 430. 99	+37, 360. 28
Total expenditure.....	5, 185, 643. 72	7, 919, 706. 68	+2, 734, 062. 96
Unexpended balance.....	337, 556. 28	640, 120. 32	+302, 564. 04
Total appropriation.....	5, 523, 200. 00	8, 559, 827. 00	+3, 036, 627. 00





# REPORT OF THE CHIEF OF THE SUGAR AGENCY, 1942

UNITED STATES DEPARTMENT OF AGRICULTURE,  
AGRICULTURAL CONSERVATION AND  
ADJUSTMENT ADMINISTRATION,  
SUGAR AGENCY,  
Washington, D. C., September 15, 1942.

MR. M. CLIFFORD TOWNSEND,  
*Administrator, Agricultural Conservation and  
Adjustment Administration.*

DEAR MR. TOWNSEND: I submit herewith the report of the Sugar Agency for the fiscal year ended June 30, 1942.

Sincerely yours,

JOSHUA BERNHARDT, *Chief.*

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## THE SUGAR PROGRAM

### DEVELOPMENTS IN 1941-42

It was apparent late in the summer of 1941 that the extraordinarily large takings of sugar by all types of consumers in the United States during 1941 would greatly reduce the record stocks of sugar with which the areas supplying this market began the year. Moreover, indications pointed to increased difficulties, because of the necessity for diverting ships to the transport of more urgently needed war materials, in getting sugar here from the Philippines and other offshore areas. Consequently, it was announced that limitations on sugar production by growers receiving payments under the sugar program would not be needed in any domestic area during 1942.

### SUGAR LEGISLATION EXTENDED

It also became clear that two vitally important steps would be necessary to encourage domestic sugar production in 1942. The first of these measures was continuance of the protection afforded domestic producers by the quota system authorized by the Sugar Act of 1937,

which was to expire on December 31, 1941, in order to protect them against a post-war collapse of prices when large stocks of sugar in offshore domestic and foreign areas could again move freely to the United States. Since the season price of the sugar beets produced in 1942 would not be ascertained until the close of the marketing year in September 1943, it appeared unfair to ask growers to take the risk of planting the crop without the protection of the sugar program. The probability of increased labor and other production costs indicated the need for an increase in the Federal payments under the sugar program as the second step. Consequently, when the Congress began consideration of sugar legislation in the latter part of 1941, the Department gave its support both to extending the Sugar Act for a period of 3 years, and to increasing the basic rate of payments under this statute by 33½ percent in order to meet certain transitory conditions connected with the agricultural situation in several of the domestic sugar-producing localities. Public Law 386, Seventy-seventh Congress, embodying these and other amendments, was passed by the Congress and on December 26 of that year President Roosevelt approved the legislation. One of these amendments extended the benefits of the sugar payment program to the Virgin Islands.

#### RECORD BEET ACREAGE PLANTED

As a result of the reassurance given domestic sugar producers by the continuance of the protection of the sugar program, and of the incentive provided by the larger Government payments on an unrestricted output, as well as by higher sugar prices, a record acreage was planted to sugar beets while sugarcane plantings in the mainland cane area were also increased substantially. However, sugar growers experienced many difficulties in the production of the 1942 crop. The principal of these difficulties was the serious shortage of labor, a problem which the Department, in cooperation with other Federal agencies, endeavored to solve, in part, by the transport of harvest workers from surplus to scarcity areas, and by the movement of some workers from Mexico to beet fields in this country. There was also the serious transportation problem brought about by the shortage of tires.

#### CONSUMERS PROTECTED BY PRICE CONTROL AND RATIONING

The large-scale diversion of vessels to the carrying of vital war products and the intense submarine warfare in the Caribbean greatly curtailed sugar shipments from the domestic and foreign offshore areas. The resultant reduction in total sugar supplies in this country made inevitable some limitation on domestic sugar consumption, while widespread increase in purchasing power made price control essential for the protection of the great majority of consumers. It is obvious that if the price of sugar had not been restricted and the commodity had not been rationed, those in the community less favored financially would have been compelled to exercise great economy in the use of sugar, while the more favored would have been able to continue consuming the quantities to which they had been accustomed. The application of a ceiling price made it possible for all to buy, while rationing assured each person a fair share of the available sugar supplies.

The diversion of shipping to the transport of war materials, plus expanded production, also led to the establishment of large inventories in the sugar-producing areas of the Caribbean. The accumulation of stocks, particularly in Puerto Rico, is likely to create an acute storage problem in these areas.

#### **SUGAR QUOTA SYSTEM SUSPENDED**

The sugar quota system was suspended on April 13, 1942, by President Roosevelt, in accordance with the Department's recommendation under section 509 of the Sugar Act of 1937. This was the third occasion since World War II started that recourse to the emergency provisions of section 509 was necessary. The quota system was first suspended on September 11, 1939, and was reinstated on December 26 of the same year.

#### **1942 CUBAN SUGAR CROP BOUGHT**

War conditions necessitated other extraordinary measures for handling the sugar situation during the year under review. On December 30, 1941, it was announced that the 1942 Cuban sugar crop would be bought by the Defense Supplies Corporation. The purchase followed negotiations between a Cuban commission and an interdepartmental committee on which the Sugar Agency was represented.

#### **INSULAR FOOD PRODUCTION STIMULATED BY SUGAR PROGRAM**

The great reduction in the number of vessels bringing sugar from, and carrying foodstuffs to, Puerto Rico created two extremely serious problems for this insular area. One of these was an unusually large accumulation of sugar stocks in the island. The second critical problem was the reduced food supply of Puerto Rico. Approximately 35 percent of Puerto Rico's food requirements on a quantitative basis are normally brought in from the continental United States. Therefore, in order to help in providing at least part of the required food an extremely important change in the sugar program for the island was made in 1942. This change provided that instead of applying, as in other years, chemical fertilizer, Puerto Rican growers wishing to receive payments under the sugar program would have to plant an acreage equal to at least 7 percent of their land on which sugarcane was growing on June 30, 1942, to soil conserving food crops, of which not less than four-fifths were to be leguminous crops. Food production in the Virgin Islands during the current growing season was similarly stimulated.

#### **BASIC DATA SUPPLIED TO WAR AGENCIES**

During the latter part of 1941 and the beginning of 1942 the Sugar Agency furnished weekly statistical data to the War Shipping Administration on the supply position of sugar refiners on the Atlantic and Gulf coasts in order to make possible, by the appropriate routing of vessels, the equitable allotment of the reduced offshore sugar supplies to such refiners, as well as to protect consumers in the areas primarily dependent on sugar from insular regions. Later, at the request of the



War Production Board and the Office of Price Administration, and by arrangement of the Bureau of the Budget, it furnished these agencies with the basic statistical data needed by them to operate their sugar allotment and rationing programs, thus making it unnecessary for each agency to gather identical information.

### INCOME POSITION OF SUGAR PRODUCERS

The Sugar Act of 1937 authorizes payments to growers who pay fair wages to field workers, refrain from employing child labor, carry out soil-conserving practices, and comply with their farm allotments (known under this legislation as proportionate shares). Producers who are also processors must furthermore pay fair prices for cane or beets bought from other growers.

During 1942 the Tariff Commission, at the request of the Department and the Office of Price Administration, conducted a field study to determine the cost of processing sugar beets, and of growing, processing, and refining cane sugar in Puerto Rico.

The Puerto Rican and Virgin Islands fair-price determinations are the only ones issued since the last report. The Puerto Rican determination covered the 1941-42 sugarcane crop and provided for certain changes in recognition of (1) the increased proceeds from the sale of molasses for industrial alcohol because of the war; (2) increased shipping and delivery expenses, and (3) the scarcity in storage and ocean shipping facilities.

The first fair-price determination issued for the Virgin Islands applied to the 1942 crop and provided for certain changes designed to bring about a cane price somewhat higher than would otherwise result.

#### SUGAR-BEET GROWERS

The income of sugar-beet growers from the 1941 crop is expected to average about \$8.33 a ton of beets, including conditional payments, as compared with \$7.03 a ton for the 1940 crop. These figures do not include the special conditional payments made for acreage abandonment or crop deficiency due to various natural disasters. This partial crop insurance, which domestic sugar growers did not enjoy prior to the sugar programs, every year prevents serious financial losses to a large number of sugar-beet farmers. The total grower income from the 1941 crop of 10,311,000 tons of sugar beets is expected to be about \$85,890,000, or only slightly less than the \$87,273,000 received for the 1940 crop of 12,292,000 tons of beets. Conditional payments included in these totals amounted to about \$18,803,000 and \$23,180,000 for the 1941 and 1940 crops, respectively.

#### LOUISIANA GROWERS

The total income of Louisiana growers from the 1941 sugarcane crop of 3,978,000 tons amounted to about \$19,890,000 or approximately \$5.00 a ton, as compared with about \$10,600,000, and \$3.62 a ton, from the 1940 crop of 2,925,000 tons of sugarcane, which had been severely damaged by freeze and floods. Conditional payments included in the 1941 total income amounted to approximately \$3,949,000, or about \$700,000 more than in the case of the 1940 crop. Included in the 1941 payments were approximately \$345,000 in acreage abandonment and crop deficiency payments. Such insurance payments on the 1940 crop totaled about \$750,000.



## FLORIDA GROWERS

Florida sugarcane growers, exclusive of the processor-producer who raises about 83 percent of that State's crop, received a total income of about \$5.10 a ton of cane of the 1941 crop, as compared with approximately \$4.60 in the previous season. The Florida crop of the 1941-42 season totaled 1,085,000 tons of sugarcane, as compared with 933,000 tons in the previous season.

## HAWAIIAN AND PUERTO RICAN GROWERS

Because of the higher sugar prices which prevailed in 1941, the total return from the crop produced that year in Hawaii was somewhat higher than that received from the previous crop. The income from the 1941 crop included about \$8,600,000 in conditional payments, as compared with \$8,851,541 on the 1940 crop.

In Puerto Rico the total income of growers from the 1941-42 crop of about 9,600,000 tons of sugarcane, the largest in the island's history, was about \$58,000,000 compared with approximately \$44,300,000 from the crop of 1940-41. The 1941-42 income includes sugar-program payments of about \$12,000,000, as compared with Government payments of \$9,566,734 on the 1940-41 crop.

CONDITIONAL PAYMENTS TO SUGAR PRODUCERS, 1941 PROGRAM<sup>1</sup>

Gross payments were as follows:

Continental sugar beet:	Dollars	Continental sugar beet—Con.	Dollars
California.....	3, 665, 000	Washington.....	406, 251
Colorado.....	3, 519, 284	Wisconsin.....	338, 612
Idaho.....	1, 623, 401	Wyoming.....	1, 014, 393
Illinois.....	48, 144		
Indiana.....	124, 993	Total.....	18, 803, 395
Iowa.....	69, 054		
Kansas.....	138, 588	Continental sugarcane:	
Michigan.....	1, 758, 570	Florida.....	612, 263
Minnesota.....	486, 175	Louisiana.....	3, 949, 239
Montana.....	1, 555, 860		
Nebraska.....	1, 654, 043	Total.....	4, 561, 502
Nevada.....	326		
New Mexico.....	2, 743	Insular region:	
North Dakota.....	241, 477	Hawaii.....	8, 594, 531
Ohio.....	722, 657	Puerto Rico..... <sup>2</sup>	12, 000, 000
Oregon.....	211, 417		
South Dakota.....	152, 175	Total.....	20, 594, 531
Texas.....	1, 556		
Utah.....	1, 068, 676	Grand total.....	43, 959, 428

<sup>1</sup> Includes acreage abandonment and crop deficiency payments.

<sup>2</sup> Estimated.

## MINIMUM WAGES

Minimum wages in all the domestic sugar-producing areas, except Hawaii, were increased substantially during 1942, chiefly because of higher sugar prices, increased Government payments, rises in general agricultural wages, and increased cost of living. The minimum rates established by the Secretary for sugar-beet field laborers during 1942 averaged about 26 percent above those prevailing in the previous season.

The minimum wages for laborers in the production and cultivation of sugarcane in the mainland cane area in 1942 were increased an average of 25 percent over the four immediately preceding sugarcane crops, while the harvesting rates were approximately 10 percent higher than those for the 3 preceding years.

In Puerto Rico basic wage rates were lifted 30 cents an 8-hour day over those in 1941. A bonus system, which becomes effective when the price of raw sugar exceeds \$3.749 a hundred pounds, will further increase grinding-season wages by 10 cents, and those for the "dead season" by 5 cents for each 25-point increase in the price of sugar up to \$4.499. During 1941 the bonus system did not apply to the dead season.

The existence of martial law in Hawaii and the resultant action of the military governor in freezing all wages on the island of Oahu prevented any change in the rates for sugar field laborers there. However, it was possible to embody a bonus in the wage determination, based on the price of sugar, to be applied on the monthly earnings of the workers. A bonus system had been voluntarily established in 1941 by Hawaiian sugarcane growers.

The first wage determination for the Virgin Islands was issued in the summer of 1942, and it provided for minimum wages of \$1.04 an 8-hour day for the production and cultivation of sugarcane and \$1.36 for harvesting operations. In 1941, when there was no Federal sugar program for this area, the prevailing daily wage for all harvesting operations, as well as for the most efficient workers in production and cultivating operations, was \$1.04, while most of the less efficient laborers were paid about 88 cents, and some, including children, as low as 50 cents a day.

The plan of protecting farm workers under the sugar program has frequently attracted the favorable attention of Government agencies outside the Department. One of the most recent of these occasions was during the hearings before the House Select Committee to Investigate the Interstate Migration of Destitute Citizens (76th Cong. 3d sess.).

#### FARMING PRACTICES

In order to stimulate increased plantings of sugar beets and sugarcane, as well as of the so-called war crops, in the mainland sugar-producing areas, the farming practice requirement for these areas was liberalized in 1942. The amount of soil-conserving practices, such as the plowing under of green-manure crops, was cut in half.

Because of the difficulty Hawaiian sugar planters were continuing to experience in securing fertilizer, as a result of war restrictions on materials and shipping, the 1942 farming-practice requirement in the Territory was maintained at the reduced levels made effective at the end of 1941. Reference has already been made to the important change made in the farming-practice requirement for the 1942-43 sugarcane crop in Puerto Rico in order to bring about increased production of soil-conserving food crops there, and to the fact that the production of such food was similarly stimulated in the Virgin Islands during 1942.

#### PROPORTIONATE SHARES FOR GROWERS

There were no limitations on sugar production in the various domestic areas, continental and insular, during 1942. Consequently, the proportionate share or allotment for each farm was nonrestrictive.